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Covid-19 Pandemic: challenges and management in dentistry
A Cross-Sectional Study in Sirte, Libya

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Abstract: In order to protect the team and the patients and stop the virus from spreading, it is crucial that dentists improve their knowledge and preventative measures because they come into direct and close contact with the patient aerosols.
Aim: This study aimed to evaluate the impact of coronavirus (COVID-19) pandemic on dental practice by conducting a questionnaire among the Libyan dental practitioners.
Materials and Methods: Our study population consisted of dentists, a questionnaire was distributed to 50 dentist (36 female and 14 male) the questionnaire was assessing knowledge, attitude, risk perception, and preparedness towards COVID-19, infection control measures and assessing dentist's fear potential financial loss and the risk of being infected.
Results: The study sample included 50 dentists, and the majority of participants were knowledgeable about COVID-19's transmission, incubation time, and primary symptoms. In addition, 72% of participants updated the WHO's current cross-infection guidelines for COVID-19.
Conclusion: Although dentists' knowledge of COVID-19 is generally adequate, it should be made better in order to improve patients management and stop the spread of COVID-19.

Keywords: COVID-19, personal protective equipment, dentistry, fear, Sirte, Libya

جائحة كوفيد -19: التحديات والإدارة في طب الأسنان
دراسة مقطعية في سرت، ليبيا

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المستخلص: من أجل حماية الفريق والمرضى ووقف انتشار الفيروس، من الضروري أن يقوم أطباء الأسنان بتحسين معرفتهم وإجراءاتهم الوقائية لأنهم يتعاملون بشكل مباشر ووثيق مع رذاذ المريض..
الهدف: هدفت هذه الدراسة إلى تقييم تأثير جائحة كوفيد-19 على ممارسة طب الأسنان من خلال إجراء استبيان بين ممارسي طب الأسنان الليبي.

المواد والطرق: يتكون مجتمع دراستنا من أطباء الأسنان، وتم توزيع استبيان على 50 طبيب أسنان (36 أنثى و 14 ذكر) كان الاستبيان يقيس المعرفة، والمواقف، وإدراك المخاطر، والاستعداد تجاه كوفيد-19 وتدابير مكافحة العدوى وتقييم خوف طبيب الأسنان من الخسارة المالية المحتملة وخطر الإصابة.

النتائج: شملت عينة الدراسة 50 طبيب أسنان، وكان غالبية المشاركين على دراية بانتقال كوفيد-19 ووقت الحضانة والاعراض الاولية. بالإضافة إلى ذلك، قام 72٪ من المشاركين بتحديث إرشادات منظمة الصحة العالمية الحالية حول العدوى المتقاطعة لكوفيد-19

الخلاصة: على الرغم من أن معرفة أطباء الأسنان بكوفيد-19 كافية بشكل عام، يجب تحسينها من أجل تحسين إدارة المرضى ووقف انتشار كوفيد-19

الكلمات المفتاحية: كوفيد-19، معدات الوقاية الشخصية، طب الأسنان، الخوف، سرت، ليبيا.

1- INTRODUCTION.

Since it was first identified in China in December 2019, coronavirus disease (COVID-19) has spread to other parts of the world and is now a major health concern. COVID-19 is a viral infection caused by a novel coronavirus called (SARS-CoV-2) and it appears that it is more contagious than MERS-CoV9 [1, 2] .Common ways for (SARS-CoV-2) to spread include direct contact with an infected individual, physical contact with respiratory droplets from coughing, sneezing, or even talking, and indirect contact with oral, nasal, or eye mucous membranes[3] .

Dentists and their clinics, as well as laboratories, have all been severely impacted by this health disaster. A considerable number of medical professionals were reported to contract the disease while working with infected persons [4] . Due to their frequent interaction with infected patients, dentists working in dental offices are more likely to contract an infection. Airborne droplets and aerosols have been found to be the primary means of COVID-19 transmission in dental offices [5, 6] . As a result, dentists should follow any rules or suggestions made regarding the best practices during the time of the pandemic.

With the global spread of COVID-19, a considerable degree of fear was spreading among the dentists public as well as among the public and lockdowns affected our lifestyle and resulted in various levels of negative psychological impacts [7, 8] .The associated COVID-19 fear include anxiety, stress, depression, fear from infection, getting quarantined if get infected, the cost of treatment or fear to carry the infection from dental practice back to the family [9] .

In addition to the closing of dental offices for all care except emergency and urgent services, COVID-19 also caused social isolation, self-isolation, travel restrictions, and fear of infection. reduced workforce across numerous industrial sectors as a result of the measures taken to stop the spread of COVID-19, as well as a general feeling of job insecurity, the fear of job loss, or concern about job continuation [10] .Due to the substantial danger of financial loss, perceived job instability has been demonstrated to be a major stressor during this crisis [11] ,negatively affecting the person's ability to manage their finances [12] . The fact that all of the participants had closed their practices or restricted their activity to urgent procedures was discovered in a previous study that examined the practical and emotional effects of the COVID-19 outbreak on daily dental clinical practice [13] . Based on these findings,

it has been hypothesized that dentists experienced high levels of perceived job insecurity during the COVID-19 outbreak. However, this difficult circumstance has given us a chance to reconsider our knowledge and comprehension of dental infection prevention procedures and to develop fresh approaches for the post-COVID era. The purpose of this survey was to determine how well-informed dentists in Sirte, Libya were about COVID-19 and the infection control procedures that were being used, as well as to analyze the difficulties and management faced by the field of dentistry.

2- Materials and Methods.

Study Design

A cross-sectional descriptive study.

Study Sample and Instrument

The dentists who were currently in practice in Sirte, Libya, were the study's target population. Age, sex, health sector (university clinics, private practice, and public sector), dental profession (general dentistry, endodontic, etc.), and working hours per week were among the demographic factors evaluated in the current study.

Questions of the survey were produced, the survey was broken down into the following categories: dentists' demographic information, dentists' knowledge of the COVID-19's mode of transmission, incubation period, symptoms, and infection control measures for preventing COVID-19, and dentists' attitudes toward treating COVID-19-positive patients.

Statistical Analysis:

SPSS (IBMR Statistical Package for Social Studies) version 20.0 was used for data entry and analyses. Qualitative data were presented as frequencies and percentages and quantitative data were presented as means and standard deviations.

3- Results:

There were a total of 50 dentists who participated in the survey. Demographic features include (36 female and 14 male, age range from 23 to 40 years old, with a mean (SD) of 32.9 (10.6) year. A total of 5 (10 %) had finished a master. Years of practice ranged from 1 to 10 year with a mean (SD) of 9.4 (8.9) year.

Most of participated dentists registered as general dentists (70.27%).

The findings indicate that both junior and senior dentists of both genders made up the sample for this study. The majority of participants in this study were female dentists (76.5%), and they included general dental practitioners and specialists as well as dentists from the public and private sectors.

As shown in table 1, there were 11 (47.3%) private practitioners, 25 (27.7%) academics, and 14 (25%) public clinical practitioners among the professional affiliations.

Figure 2 illustrates how dentists who took part in the survey responded to COVID-19 practice-related questions. As can be seen, the majority of dentists in our study share a number of practices. This includes staying current on WHO recommendations for COVID-19 cross-infection control (72%), monitoring the patient's temperature prior to dental treatment (74%), and only reporting dental therapy in emergency situations (30%).

Table 1: Participants' demographic distribution

Demographic Variables	N	%
Gender		
Male	14	28%
Female	36	72%
Age in years	44	88%
20–30	6	12%
31-40		-
40–50		-
Over 50	42	84%
Years of practice	8	16%
1-5		-
6-10	25	50%
>10	11	22%
Health sector	14	28%
University		
Private	29	58%
Public	13	26%
Working hours per week	7	14%
1-19h	1	2%
20-34	48	96%
35-49	1	2%
50	2	4%
Specialization *	2	4%
General Dentistry	3	6%
Surgery	2	4%
Prosthetics		
Periodontology		
Endodontics		
Pedodontics		

Regarding understanding of COVID-19, 78% of those interviewed dentists correctly identified their familiarity with the virus's mechanisms of transmission, incubation period, and primary clinical signs (Figure 1). This was true regardless of their professional affiliation (p 0.05), however.

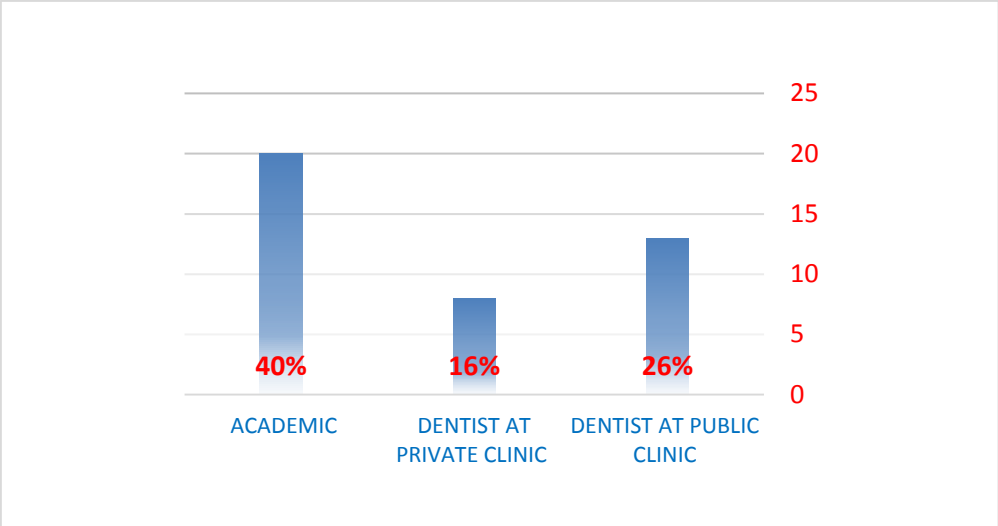

Figure 1. Awareness of participating dentists of COVID-19 modes of transmission, pathogenesis and clinical symptoms.

Figure 2 illustrates how dentists who took part in the survey responded to COVID-19 practice-related questions. As can be seen, the majority of dentists in our study share a number of practices. This includes staying current on WHO recommendations for COVID-19 cross-infection control (72%), monitoring the patient's temperature prior to dental treatment (74%), and only reporting dental therapy in emergency situations (30%).

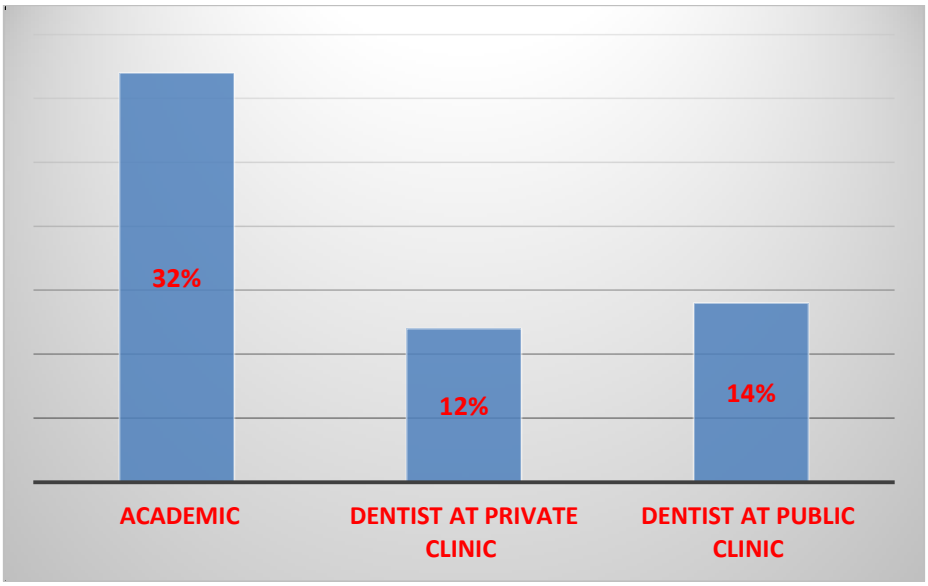

Figure 2. Percentage of dentists who update with WHO guideline for cross infection regarding COVID-19

Fear of COVID-19, in terms of previous COVID-19 infection, about 47% of dentists reported with history of COVID-19 infection at the time of data collection, 95% knew COVID-19 cases, and 14% knew a

person who died due to COVID-19. 89% of the participating dentists stopped working in clinic since the national government's declaration of mandatory lockdown, and when we asked dentists, how current average monthly income had changed due to COVID-19 compared to the same period last year, more than half (64%) of dental professionals expected their personal income from dentistry to reduce when compared to the months prior Figure 3

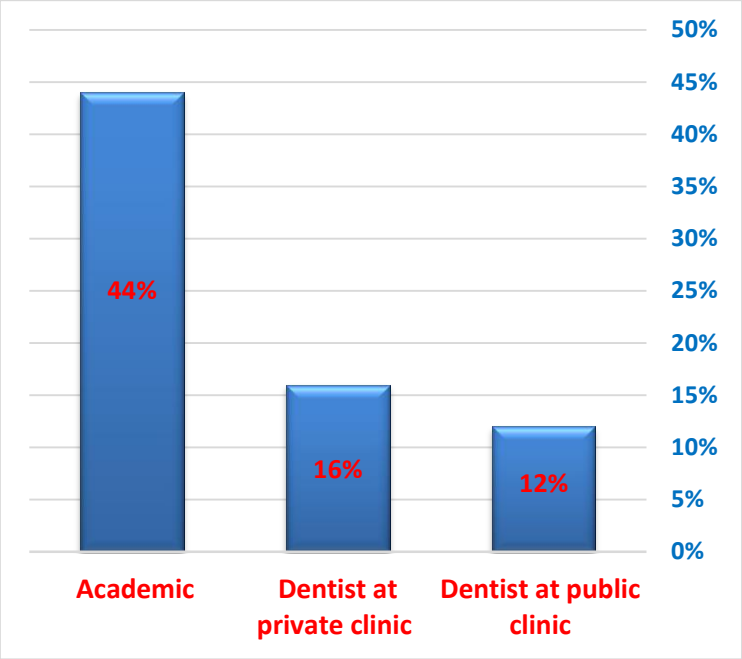

Figure 3. Fear that participating dentists might infect the family by returning from the dental practice

Discussion.

In this time of a global health emergency, the dental team's involvement in limiting the spread of COVID-19 is crucial for raising awareness of the disease both among themselves and in the community. Therefore, it is crucial that dentists have a strong understanding of COVID-19 and a favorable attitude toward infection prevention measures [14] . The purpose of the current study, which was conducted in this context, was to assess the current knowledge and practices of dentists practicing in Sirte, Libya, with regard to the coronavirus and the infection control measures they have adopted. It also aimed to identify any shortcomings or knowledge gaps with regard to COVID-19, which would help to inform any future planned interventions to increase dentists' knowledge and awareness for better health education.

The majority of the professionals who answered to the survey were general dentists, and the proportion of female dentists was higher than that of their male counterparts. This study has shown that the surveyed dentists had a fair level of understanding of COVID-19. The fact that dentists in this survey were able to pinpoint the route of transmission and the primary clinical symptoms of COVID-19, which aids them in identifying the danger and acting accordingly, is considered a cornerstone in the management and prevention of the infection. This is attributable to the extensive efforts made. Since the

clinical symptoms of the common cold and COVID-19 are the similar, including headache, sore throat, fever, coughing, and weariness, 13% of the sample was unable to distinguish between them. Patients with COVID-19 may also have no symptoms at all or even have no temperature. Participant attitudes on what to do if a patient in their clinics started coughing or sneezing varied; 55% said they would refer the patient to the hospital without treating them. Therefore, suspected cases should be verified positively with particular assays to confirm [15] ; a research in Iran [16] has shown comparable observations greater anxiety about COVID-19, perception of increased risk of infection in dental settings, and transmission of infection to family, Therefore, during the COVID-19 epidemic, dentists should evaluate patients by taking the temperature of every member of the staff and every patient as part of a standard practice if there are no symptoms to stop the infection from spreading.

In our study, 67.6% of participants had knowledge of infection prevention and control Techniques; most dentists were able to accurately respond to survey questions. This finding is consistent with earlier research from Jordan [17] and Indonesia [18] , which indicated that 71% and 96% of practicing dentists were aware of the COVID-19 transmission mechanism and the infection control procedures used in dental clinics.

Conclusions:

It is crucial that the dental team stay up to date on new information in this rapidly changing sector and be aware of strategies for reducing COVID-19 transmission in dental clinics as the number of COVID-19 cases continues to climb. Continuous educational initiatives should be implemented to improve dentists' knowledge of infection control.

The management of patients during this pandemic would benefit from further development.

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