

## Patients Attendance Jordanian Royal Medical Services Dental during COVID-19

Ahmad Zuqaibeh <sup>1</sup>, Murad Al-Zaqeba <sup>2</sup>

|  |  |
|--|--|
| <p>Article history<br/>Submitted: 10 March, 2021<br/>Revised: 15 March, 2021<br/>Accepted: 19 March, 2021</p> <p><b>Keywords:</b><br/><i>Jordan Royal Medical Services, Patients' behavior, Royal Medical Services dental clinics.</i></p> | <p><b>Abstract</b><br/>At a time when the world is looking for a way to prevent the spread of the virus by spraying and breathing, the dentist is forced to deal directly and very closely with the patient's mouth and repeatedly with more than one person during the day, especially since dental cleaning tools and mechanisms may spread the infection if the doctor is not interested, Moreover, this paper aims to investigate the patient's awareness on the potential risks of COVID-19 transmission in dental practice and to investigate patients' behavior and to analyze their reactions in relation to COVID-19 pandemic professional restrictive measures. However, an observational descriptive study which involves a self-administrated questionnaire composed of 14 questions has been distributed to dental patients in order to investigate their behavior and to analyze their reactions in relation to COVID-19 pandemic restrictive measures in the Royal Medical Services dental clinics. The investigator explained the aims and the methods of the study to the patients and confirmed that all information will remain confidential and anonymous. In addition, the researchers assured to patients that their decision to complete the study will not affect the dental service they will receive in the future. Responses were collected, and data have been entered into SPSS 25 for Windows software and will be analyzed using the Rasch model, Chi-square test and phi square at the 0.05 level of significance. This paper found that a total of (330) patients (188) females and (142) males, age of patients were between (80-10) years old were chosen to asked about their awareness to COVID-19 pandemic in Jordan Royal Medical Services.</p> |
|--|--|

### 1. Introduction

This The on-going Coronavirus disease (COVID-19) outbreak in China has become the world's leading health headline and is causing major panic and public concerns. On January 30, 2020, the World Health Organization (WHO) declared that the new coronavirus outbreak is a public health emergency of international concern [1]. COVID-19 is an acute airway infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [2]–[4]. The first outbreaks were identified at the end of 2019 in Wuhan, Hubei Province, China and, initially, the etiology of the disease was unknown. On 11 March 2020, the World Health Organization (WHO) declared the SARS-CoV-2 pandemic due to the public health threat [5].

The speed at which the virus spreads prove how it is contagious. This is not the first pandemic in human history, but it is the first to cover the whole world. Globalization and the ease of travel are factors that have contributed to the virus's migration. Based on measurements and recommendations from previous pandemics, many international public health, governmental and other societies have provided guidance which is regularly updated, and several approaches have been implemented in order to control transmission, including reliable monitoring of the SARS-CoV-2 transmission rates and severity, mitigation of the impact of COVID-19 in healthcare and social care settings, detection of clusters or outbreaks in specific settings, and, once achieved, maintenance of COVID-19's elimination status.

The data on previous virus epidemic/pandemic procedures, such as Ebola virus or MERS-CoV (Middle Mast respiratory syndrome coronavirus) and influenza (H1N1 influenza A pandemic or swine flu pandemic), with their severe socio-economic burdens, have been implemented into the current guidelines and recommendations, including those from the WHO and the European Centre for Disease Prevention and Control (EDCD) [5].

The outbreak and diffusion of the COVID-19 have caused an emergency status in the health system, including in the dentistry environment. The fact that the virus involves a symptom-free incubation period of on average almost a week for

the majority of those infected in which contagiousness is maybe most prominent, increases the notion that this is an invisible enemy, inducing a feeling of losing control over ones' lives [6].

Consequently, both leaders and clinicians face the difficult task of making people feel safe with uncertainty. Since the COVID-19 outbreak was declared a pandemic, several dental care facilities in affected countries have been completely closed or have been only providing minimal treatment for emergency cases [7]–[11]. Dental care has been impacted by the well-documented evidence that asymptomatic patients may transmit the virus. Dental professionals appear, indeed, at high risk of contagion due to the exposure to saliva, blood, and aerosol/droplet production during the majority of dental procedures. COVID-19 transmission during dental procedures can therefore happen through inhalation of aerosol/droplets from infected individuals or direct contact with mucous membranes, oral fluids, and contaminated instruments and surfaces [12] [13].

## **2. Literature Review**

Dental pain is an unlikely pain that leads the patient to ignore many safety precautions in order to get rid of pain, but with the Covid-19 crisis, infection prevention measures are no longer an option, but rather you will put your life in exchange for visiting the doctor's office if you do not take care to take all precautions that reduce the percentage Exposure to infection [14] [15].

According to American Dental Association (2020) 90% of dental clinics were chosen to postpone the reception of patients except for urgent and emergency cases, and the main reason for this is due to the nature of the spread of the new coronavirus through respiratory drops, and the increased likelihood of the virus spreading in the dental clinic [16] [12].

At a time when the world is looking for a way to prevent the spread of the virus by spraying and breathing, the dentist is forced to deal directly and very closely with the patient's mouth and repeatedly with more than one person during the day, especially since dental cleaning tools and mechanisms may spread the infection if the doctor is not interested, by sterilization and disinfection of the clinic and examination room, specifically, at successive intervals. it may seem alarming, so it should be there in the patients and think twice before scheduling an appointment to see a doctor; If the pain is likely or with the aim of periodic dental cleaning, it is advised to postpone the visit a little, and to replace it with a consultation via video calls, which has become internationally recognized as a method of medical advice during the Corona virus crisis, and during which the doctor can guide the patient to some advice that may relieve these pain [17] [18].

The recent spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its associated coronavirus disease has gripped the entire international community and caused widespread public health concerns. Despite global efforts to contain the disease spread, the outbreak is still on a rise because of the community spread pattern of this infection. This is a zoonotic infection, similar to other coronavirus infections that is believed to have originated in bats and pangolins and later transmitted to humans. Once in the human body, this coronavirus (SARS-CoV-2) is abundantly present in nasopharyngeal and salivary secretions of affected patients, and its spread is predominantly thought to be respiratory droplet/contact in nature. Dental professionals, including endodontists, may encounter patients with suspected or confirmed SARS-CoV-2 infection and will have to act diligently not only to provide care but at the same time prevent nosocomial spread of infection. Thus, the aim of this paper is to investigate Patients Attendance Jordan Royal Medical Services Dental Office during COVID-19 Outbreak. In addition, specific recommendations for dental practice are suggested for patient screening, infection control strategies, and patient management protocol [19] [1], [5].

### *2.1 Preventive measures in dental clinics*

When talking about methods of preventing corona virus, which has become known to be closely related to the respiratory tract and mouth, it is necessary to clearly refer to the possibility of infection with this virus and other harmful viruses and bacteria by neglecting oral health and dental treatment.

The mouth is the key to the airway and its main gateway, until it became known to everyone that the mouth is the most important outlet through which the Corona virus enters the body, so as much as a person protects himself and his safety by maintaining his personal hygiene, he is safe from the evil of infection with this emerging virus.

In the current circumstances of Corona, the warning against gatherings in any place intensifies, and the current health situation has imposed emphasis on some health points that must be listed here: It is better not to have more than one patient only in the clinic, and to avoid bringing escorts, and this requires strict and correct coordination of appointments, sterilization and cleaning of all clinic equipment and tools periodically, especially after each patient, as well as continuous wearing of bra shields, glasses and masks, destroying all perishable materials after every patient, and measuring the patients' temperature before entering the clinic, taking into account the sterilization of the patient's hands at the clinic door [20].

The oral and dental specialist also emphasized following prevention methods when going to dental clinics in particular, and in daily life in general, which were emphasized by the World Health Organization, such as wash your hands for 20 to 30 seconds, disinfect surfaces, such as doorknobs, phones and keys, in addition to rub hands with an alcohol-based disinfectant, not less than 70% of alcohol, as well as maintain a distance of 3 to 5 feet between you and others. 5-Maintain respiratory hygiene and wear a muzzle when coughing and sneezing.

## *2.2 Dental treatment during COVID-19*

During the COVID-19 pandemic, providing most aspects of dental care is very difficult, and many dental clinics have closed. Dental care has been impacted by the well-documented evidence that asymptomatic patients may transmit the virus. Furthermore, dental teams may be inadvertent vectors with physical distancing between dentist and patients being impossible during dental treatment.

COVID-19 virus is present in the saliva, throat, and the nasal passages, and therefore, dental interventions can provoke involuntary coughing or gagging, which propels infective droplets and aerosols into the air. Furthermore, routine dental procedures such as fillings and cleanings create spray and aerosols, which propel smaller particles into the air and the surrounding areas. For those aerosol-generating procedures (AGPs), dental teams need to wear specially fitted respirator masks, goggles and face shields and carry out lengthy deep cleaning protocols of the surgery areas between patient appointments. Moreover, during the pandemic, many hospital-based dentists have been repurposed to other roles. Many dental clinics in the community have chosen to close for operational safety reasons as personal protective equipment (PPE) is scarce and only variably available outside of hospitals. PPE is understandably being prioritized for staff at the frontline carrying out emergency intubation and or those teams nursing sick COVID positive patients [21].

The result is that most people with dental problems are being offered video or phone consultations in the first instance. These virtual consultations offer dentists the opportunity to safely triage problems and offer advice for interim self-management of dental pain and infection without patients leaving the comfort and safety of their own homes. If you have a broken filling or tooth, which is causing sensitivity or problems eating, the dentist may ask you to visit a local pharmacy and buy an off-the-shelf temporary filling kit for 'self-dentistry.' This is usually in the form of a soft, sticky paste, which you can press into the cavity or hole with a clean finger and let it set hard after a few minutes with instructions not to eat or drink for a couple of hours. This is an effective self-management strategy and temporary fillings such as these usually will stay in place for a few weeks and can be topped up from time to time if they wear down or are lost over time [22].

## **3. Methods and sampling frame**

Random sampling technique was used in this paper, while, the measurement given the relative lack of covid19 data, the specific items measuring covid19 have been explored to investigate the awareness attitudes towards covid19, a sample in the Royal Medical Services dental clinics was distributed. A questionnaire comprising these items assessed participants' awareness of 14 items by asking about their Attendance Jordanian Royal Medical Services Dental during COVID-19 with a possible response of "yes" or "no". Based on their responses, they were asked to list other questions in concern, this indicated insight into the level of awareness they possessed.

## **4. Findings**

### *4.1 Socio-demographic covariates*

Demographic details showed variant characteristics research sample ( Patients Attending Jordan Royal Medical Services Dental Office during COVID-19 Outbreak); gender percent's was 43% for males and 57% for females , age were categorized into 6 groups according to birth year , the result implied that the most attended groups were those whom their birth years from 1980 to 2000 ; the youth generation , and the minor attended group was those whom their birth years less than 1960 and less than 1970; the elder groups in research sample, Level of education varied into five categories: (Tawjihi and less) and BA were most attended groups in contrast , patients with high education such as MA and PhD were the minor attended groups, also geographic variance taken in to consideration in the current study ; patients from Amman ,Karak and Alzarqaa is the the most attended groups ,in contrast of other Governorates such Ajloun ,Ramtha and Tafila. Demographic details for Material status indicated that married patient attending JRM more than singles, as shown in the table (1).

Table 1: Socio-demographic variables distribution for research sample for JRM patient

| Socio-demographic factor | Frequency | Percent |
|--------------------------|-----------|---------|
| Gender                   |           |         |
| Male                     | 142       | 43.0    |
| Female                   | 188       | 57.0    |
| Date of birth            |           |         |
| 1950-less than1960       | 15        | 4.5     |
| 1960-less than1970       | 23        | 7.0     |
| 1970-less than1980       | 44        | 13.3    |
| 1980-less than1990       | 87        | 26.4    |
| 1990-less than2000       | 75        | 22.7    |
| More than 2000           | 86        | 26.0    |
| Level of education       |           |         |
| Tawjihi and less         | 155       | 47.0    |
| Diploma                  | 40        | 12.1    |
| BA                       | 131       | 39.1    |
| MA                       | 3         | 0.90    |
| PhD                      | 3         | 0.9     |
| Governorate              |           |         |
| Amman                    | 140       | 42.4    |
| Alkarak                  | 100       | 30.3    |
| Al Zarqa                 | 64        | 19.5    |
| Other                    | 26        | 7.8     |
| Material status          |           |         |
| Single                   | 144       | 43.6    |
| Married                  | 186       | 56.4    |
| Total                    | 330       | 100%    |

#### 4.2 Latent variables covariates

Research main objective is to Investigate the patient behaviour and to analyse their reactions in relation to COVID-19 pandemic restrictive measures in the Royal Medical Services dental clinics, Figure (1) designated the descriptive characteristics of Latent variables through frequencies ; Rejection of attendance Royal Medical Services dental clinics is the controlling role in current research; 243 out of 330 (73.6%) patients reject to attend their usual and emergence dental appointment, and just 87 out of 330 (26.4%) patients indicated less awareness, in more detailed vision awareness reflected in the research scale by 15 items through some traits of awareness (realizing the importance of not attending clinics or anywhere else during COVID-19 Outbreak, grasping world health knowledge, avoiding COVID-19 Outbreak transmission, searching attitude for information sources , assessing anxious about infection, judging sources of infections, verifying safety precautions by wearing mask and gloves and protecting social distance, trusting sterilization methods, and finally determining satisfaction about JRMS dental department protocol). See figure (1) that answered the descriptive allocation of Research objective; the result showed awareness behaviour from patients during COVID-19 Outbreak in the Royal Medical Services dental clinics.

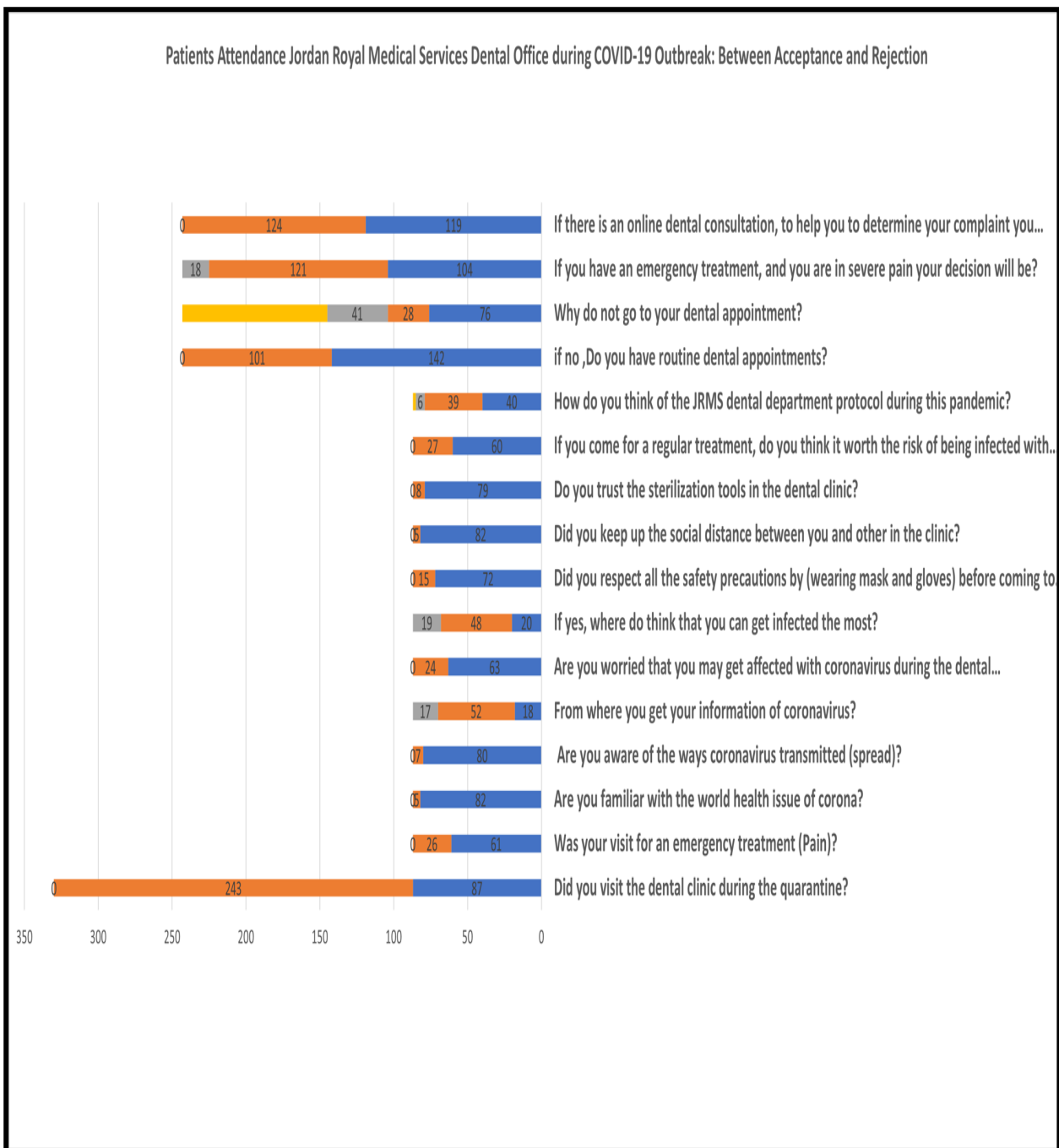


Figure 1: Descriptive level of awareness of COVID-19

#### 4.3 Statistical analysis result (relationships validity)

Patient’s socio-demographic characteristics including, gender, age, level of education, geographic distribution and material status were reported using descriptive statistics. the descriptive perspective of Research objective were solved in the previous section, but verifying of data accuracy have to be ensured by running he chi-square, phi-square goodness of fit tests to Investigate the patient behaviour and to analyse their reactions in relation to COVID-19 pandemic, hypothesis was derived as “There is a relationship between visiting dental clinic during the quarantine and the categories types (sex, age, educational level, government and material status).

To test hypothesis the researchers used statistical package of social science (SPSS) analysis extended with R analysis for psychological and health investigations (Rasch model) to test that relationships in addition to JMETRIK software in order to measure the response rate awareness through (discriminate and difficulty criterion).

The result showed that: 1. There is weak relationship between visiting dental clinic during the quarantine and the sex type because (Phi coefficient =0.015) is very small and not significant when sig =.786, also, 2. There is a significant relationship between visiting dental clinic during the quarantine and the age, because (chi coefficient =10.234) is

significant;  $p = 0.025$  There are a 3. significant relationship between visiting dental clinic during the quarantine and the educational level, because (chi coefficient =13.751a) is significant;  $p = 0.049$ , in addition that 4. There is a significant relationship between visiting dental clinic during the quarantine and the governance, because (chi coefficient =15.878) is significant;  $p = 0.035$ , in addition that 5. There is weak relationship between visiting dental clinic during the quarantine and the Material status because (Phi coefficient =-.020) is very small and negative and not significant when  $\text{sig} = 0.723$ .

Rasch Analysis is a distinctive approach of mathematical modelling based upon a latent trait and accomplishes probabilistic conjoint additively; conjoint denotes measurement of people and items on the same scale and additively is the equal interval property of the scale). Rasch models are worn when a set of questionnaire items are planned to be figured together to provide a total score. In this study, the total score measured by discriminant value, items categorized in specified scale of wariness trait of patience as followed: Alertness ,attention, familiarity, apprehension ,information, understanding, mindfulness attentiveness ,consciousness, appreciation ,understanding ,experience ,keenness, eagerness comprehension and enlightenment, according to the classification of (Nipp et al., 2017; Van Dam, et al (2010). See the figure 2.

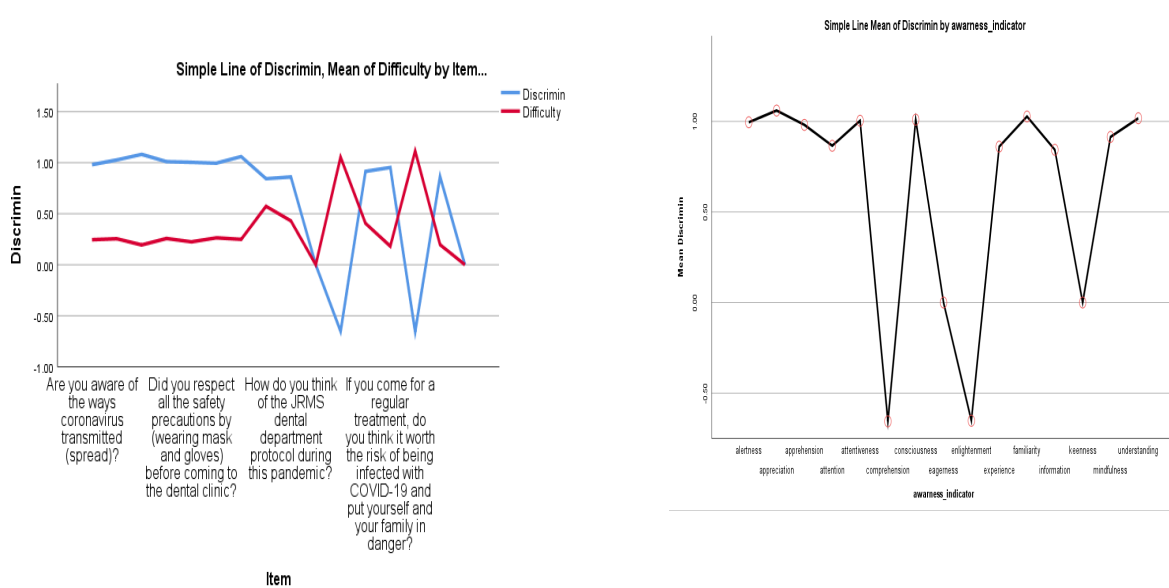


Figure 2: Simple Line Mean

The awareness trait is one of the most popular measures of response; alertness ,attention ,familiarity, apprehension , information ,understanding ,mindfulness attentiveness ,consciousness, appreciation ,understanding ,experience , keenness, eagerness comprehension and enlightenment; all are reflective image of the 16 questioner items, exhibiting promising psychometric properties and theoretically consistent relationships to awareness trait. The present study examined the response behavior and scale properties in a large sample of patients ( $N = 330$ ), The result indicated that the response behavior of the patients is not fully awareness, there is some gaps in awareness conceptualization, the statements conferred greater statistical information about the underlying latent trait. Further research is needed to determine which differences, mechanisms, and links of the plentiful operationalization's of awareness in COVID-19 pandemic are theoretically consistent and most outstanding to positive outcomes, especially in medical sector.

## 5. Conclusion

The COVID-19 pandemic has had a huge impact on health care facilities and hospitals. The aim is not only to treat patients but also to fight the pandemic. Due to the potential risk of SARS-CoV-2 transmission, doctors and dentists may face dilemmas regarding the diagnosis and treatment of patients, especially those with a heavy medical history. For this reason, it has become extremely important to share knowledge and experiences with other medical professionals. The COVID-19 pandemic is a challenge for both the doctor and the patient, but it can also become an opportunity to integrate the medical community.

Finally, during this pandemic and indeed after it is over, access to routine dentistry may be impacted for many months. During this time, it is imperative to care for your mouth and keep it healthy by brushing twice a day with fluoride toothpaste, limiting sugar intake to mealtimes where possible and avoiding habits, which may cause fillings to fracture, such as opening things with your teeth, chewing hard sticky foods, and carrying our risk activities such as physical sports without mouth guards or play fighting.

At this time, it is especially important to carry out good toothbrush hygiene etiquette including washing your hands before and after brushing, rinsing your brush in hot water after use, never sharing your toothbrush, and throwing away your toothbrush if you have experienced symptoms of COVID-19. Don't forget to go and get a dental check-up once the pandemic is over and your dental team is back at work in their clinics so that they can check your teeth and gums to ensure that your mouth is healthy and carry out any remedial work.

This paper is recommended to make sure that the dental clinic that you are targeting is keen on sterilization and disinfection procedures well, and that there is a spacing between the dates of receiving patients, to prevent their accumulation inside the clinic, and to provide the opportunity for workers to clean the place after each patient, regardless of the extent of the virus. In addition, the doctor must wear a protective medical suit and a muzzle while examining you and it is self-evident that doctors sterilize the tools after each use, and this becomes necessary during the current coronavirus crisis.

## References

- [1] J. Alharbi, D. Jackson, and K. Usher, "The potential for COVID-19 to contribute to compassion fatigue in critical care nurses." Wiley Online Library, 2020.
- [2] R. Izzetti, M. Nisi, M. Gabriele, and F. Graziani, "COVID-19 transmission in dental practice: brief review of preventive measures in Italy," *J. Dent. Res.*, vol. 99, no. 9, pp. 1030–1038, 2020.
- [3] R. Izzetti *et al.*, "Discovering a new anatomy: exploration of oral mucosa with ultra-high frequency ultrasound," *Dentomaxillofacial Radiol.*, vol. 49, no. 7, p. 20190318, 2020.
- [4] Y. R. Qasim, N. Ibrahim, S. B. M. Sopian, and M. A. Al-Zaqeba, "Measurement the Performance Levels of Islamic Banks in Jordan."
- [5] Y. Amekran and A. J. El Hangouche, "Coronavirus disease (COVID-19) and the need to maintain regular physical activity.," *J. Sports Med. Phys. Fitness*, 2020.
- [6] M. Tysiąc-Miśta and A. Dzedzic, "The attitudes and professional approaches of dental practitioners during the COVID-19 outbreak in Poland: a cross-sectional survey," *Int. J. Environ. Res. Public Health*, vol. 17, no. 13, p. 4703, 2020.
- [7] J. P. A. Ioannidis, C. Axfors, and D. G. Contopoulos-Ioannidis, "Population-level COVID-19 mortality risk for non-elderly individuals overall and for non-elderly individuals without underlying diseases in pandemic epicenters," *Environ. Res.*, vol. 188, p. 109890, 2020.
- [8] M. A. L. I. A. Al-Zaqeba, S. A. Hamid, and I. Muhammad, "Tax compliance of individual taxpayers: a systematic literature review," *Proc. IIER Int. Conf.*, no. April, pp. 42–52, 2018.
- [9] S. Alaaraj, Z. A. Mohamed, and U. S. A. Bustamam, "Growth Strategies and Organizational Performance of Service Companies in Malaysia : The Mediating Role of Knowledge Sharing," *Adv. Glob. Bus. Res.*, vol. 15, no. 1, 2018.
- [10] S. Alaaraj, "Knowledge Management Capabilities, Trust, and Performance of Manufacturing Companies in Emerging Economies," in *Proceedings of 177 th The IIER International Conference*, 2018, pp. 1–9.
- [11] M. Kayali and S. Alaaraj, "Adoption of Cloud Based E-learning in Developing Countries : A Combination A of DOI , TAM and UTAUT," *Int. J. Contemp. Manag. Inf. Technol.*, vol. 1, no. 1, pp. 1–7, 2020.
- [12] M. Dave, N. Seoudi, and P. Coulthard, "Urgent dental care for patients during the COVID-19 pandemic," *Lancet*, vol. 395, no. 10232, p. 1257, 2020.
- [13] B. F. Voight *et al.*, "Twelve type 2 diabetes susceptibility loci identified through large-scale association analysis," *Nat. Genet.*, vol. 42, no. 7, p. 579, 2010.
- [14] M. A. A. Al-Zaqeba and M. T. AL-Rashdan, "The Effect Of Attitude, Subjective Norms, Perceived Behavioral Control On Tax Compliance In Jordan: The Moderating Effect Of Costums Tax," *Int. J. Sci. Technol. Res.*, 2020.
- [15] A. A. T. Naqvi *et al.*, "Insights into SARS-CoV-2 genome, structure, evolution, pathogenesis and therapies: Structural genomics approach," *Biochim. Biophys. Acta (BBA)-Molecular Basis Dis.*, p. 165878, 2020.
- [16] C. Huang *et al.*, "Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China," *Lancet*, vol. 395, no. 10223, pp. 497–506, 2020.
- [17] M. Nicola *et al.*, "The socio-economic implications of the coronavirus and COVID-19 pandemic: a review," *Int. J. Surg.*, 2020.
- [18] M. Alzaqebah, N. Alrefai, E. A. E. Ahmed, S. Jawarneh, and M. K. Alsmadi, "Neighborhood search methods with Moth Optimization algorithm as a wrapper method for feature selection problems," *Int. J. Electr. Comput.*

*Eng.*, vol. 10, no. 4, p. 3672, 2020.

- [19] C. Del Rio and P. N. Malani, "COVID-19—new insights on a rapidly changing epidemic," *Jama*, vol. 323, no. 14, pp. 1339–1340, 2020.
- [20] A. Rezaakhsh, A. Ala, and S. H. Khodaei, "Novel coronavirus (COVID-19): a new emerging pandemic threat," *J. Res. Clin. Med.*, vol. 8, no. 1, p. 5, 2020.
- [21] Q. Bi *et al.*, "Epidemiology and transmission of COVID-19 in 391 cases and 1286 of their close contacts in Shenzhen, China: a retrospective cohort study," *Lancet Infect. Dis.*, vol. 20, no. 8, pp. 911–919, 2020.
- [22] M. A. A. Al-Zaqeba and M. T. Al-Rashdan, "Extension of the TPB in tax compliance behavior: The role of moral intensity and customs tax," *Int. J. Sci. Technol. Res.*, vol. 9, no. 4, pp. 227–232, 2020.