

Fear, Knowledge, and Modification of Practice among Iraqi Dentists to Fight Novel Coronavirus Disease (COVID-19) Pandemic

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Abstract: Health care workers, especially doctors and nurses who are in direct contact with COVID-19 patients are on high-risk professions despite wearing full protective equipment. This study aimed to assess the fear and emotional stress among Iraqi dentists from getting infected with COVID-19 and also their knowledge in preventing this disease. A cross-sectional study using an online survey questionnaire consisted of 22 questions was implemented using Google Forms. The study started after gaining the agreement of the authority. The questionnaire was put out on social media; well known Iraqi dentist's Facebook groups, and through e-mail. The study covered all the governorates of Iraq. The data were processed using SPSS. The sample was 516 dentists (216 males, and 255 females) and 218 participants were graduates, 249 postgraduates, and 49 of them were students. Results showed that, dentists who were afraid of getting infected with COVID-19 were 82%. Iraqi dentists have knowledge about the Novel COVID19 and are afraid of getting infected. Iraqi dentists need modifications in their practice to protect themselves and their patients from this pandemic.

Keywords: COVID-19, Dentists, Fear, Anxiety, Knowledge

1. Introduction

COVID-19 is related to the Coronavirus family (SARSCoV2) in which the virus is a positive-sense single-stranded RNA. The interspecies spread of viruses from one host species to another is the major factor responsible for the majority of emerging and reemerging infections that threaten the public health (Kasmi et al., 2020; Gorbalenya et al., 2020). In December 2019, after the outbreak of COVID-19 pandemic, with its high contagion potential, and exponential incidence rate, it quickly spread worldwide. Inaccurate or incorrect information about the spread of the virus, the period of its incubation, its geographic extent, the actual number of infected people, and the real mortality rate has led to anxiety with fear and panic in the population. (Bogoch et al., 2020; Ornell et al., 2020). In addition, the commencement of the extraordinary firm measures of quarantine, in one country after another, started an extensive psychological problem, such as panic disorder, anxiety, and depression (Sohrabi et al., 2020; Haleem, 2020; Qiu, 2020). Health care workers, especially doctors and nurses that are in direct contact with COVID-19 patients are on high-risk professions despite wearing full protective equipment. They are still in jeopardy of getting infected and their fear from the outbreak provokes wariness and uncertainty that can cause serious psychophysiological diseases (Hamm, 2020; El-Hage, 2020).

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Dental healthcare professionals are the most risky group who are prone to danger of contamination with the virus because dentists have direct contact with patients and work with patients in close vicinity. The virus mode of transmission is predominantly through aerosol and droplets thus, dentists' work becomes more challenging. Therefore, it is normal for the dentist to develop fear and anxiety from potentially getting the disease from their patients and possibly spreading it to their families (Micik et al., 2020; Burton, 2020; Izzetti et al., 2020).

Mortality rates of COVID-19 are much higher in old age groups and patients with chronic diseases and weak immunity hence, dentists fall into these high-risk groups. Especially older dentists are more likely to be fearful and anxious in treating their patients and being in direct contact with them even if they strictly follow infection control measurements. The importance of adopting exceptional infection control protocols in dental practice is crucial in limiting the effects of spreading the virus as dentists are the most vulnerable to pick up the virus (Burton, 2020; Izzetti et al., 2020; Onder, 2020; Yang, 2020; Abdi et al., 2020; Miller, 2020). In Iraq, the local health authorities has become more concerned about the opportunity of the domestic spread of the disease (Brief, 2020; IMH, 2020).

At the beginning of the spread of the disease, many dental clinics were still operating and receiving patients. The rapidly evolving situation and the growing number of confirmed cases of COVID-19 in Iraq directed burden on hospital emergency departments with the partial closure of private clinics that are already struggling with the pandemic. These factors can overwhelm and confuse the dental health professionals who work both in hospital emergency departments and other operative sectors (IMH, 2020; Alharbi, 2020). This current study aimed to assess the fear and emotional stress among Iraqi dentists from getting infected with COVID-19 and their knowledge to protect themselves and their patients from this disease.

2. Materials and Method

Primary Objectives:

To determine the demographic distribution and to assess the knowledge, fear, and anxiety of Iraqi dentists.

Study Design:

This study is cross-sectional and was carried out in Tishk International University, Erbil, Iraq from 28 April 2020 until the second of May 2020. The study was implemented by using online survey questionnaire using Google Forms and was put out on reliable social media sites; well-known Iraqi dentist's groups and pages. It was also sent to dental professionals through e-mail in cooperation with Iraqi Dental Association to cover all the governorates of Iraq.

Participants:

The participants included in the study were senior dental students that have contact with patients, also graduates, and postgraduate dentists both general dental practitioners and specialists participated as well. Other countries were excluded from the study because they may not share the same conditions and measurements as in Iraq. Dental assistants were also in the exclusion criteria of the study. In this study approximately 900 participants enrolled and among them 516 responded (216 males and 255 females). Age was arranged in 10-years intervals. Cronbach's Alpha test was used to test the volume

of the reliability between the questions. The volume of the reliability between the questions was high (>0.7).

Questionnaire Sheet:

The questionnaire contained 28 multiple choice questions divided into three sections, the first one was related to the participants' personal and demographic information which included 6 questions. The second section included nine questions which investigated Iraqi dentist's psychological state such as fear and anxiety of getting infected and transmitting the virus. The third section (13 questions) assessed their knowledge and implementation of the guidelines released by CDC and WHO in their practice to combat COVID-19 outbreak (Ahmed et al., 2020).

Ethical Considerations:

All information of the participants and their answers remained hidden and inaccessible to the public. The ethical review committee of the University approved the study, and the study was registered in the research department of the university before the study was conducted.

3. Results

a) Demographic analysis of the participants

Table (1) shows the demographic analysis of the participants. The total number of participants was 516 (261 males, and 255 females). While the highest participation falls into the group of 20-30 years (48%), the lowest participation was above 60 years (1.6%). Regarding qualification, the highest number of responses was from the postgraduates (48%). The analysis of participants in terms of participants' designation, the highest number of responses was from General Dental Practitioner (71.3%). In terms of participants' qualification and the workplace, it was seen that 32.6% of them worked in hospitals, and 27.9% of them worked in private clinics.

Table 1: Demographic analysis of participants

Demographics		Number (%)
Gender	Male	261 (50.6)
	Female	255 (49.4)
Age	20-30	252 (48.8)
	31-40	179 (34.7)
	41-50	56 (10.9)
	51-60	21 (4.1)
	Above 60	8 (1.6)
Designation	General Dental Practitioner	368 (71.3)
	Specialist	139 (26.9)
	Consultant	9 (1.7)
Qualification	Graduates	218 (42.2)
	Postgraduates	249 (48.3)
	Students	49 (10%)
Workplace	Hospital	168 (32.6)
	Hospital, Private, and clinic	97 (18.8)
	Hospital, Private, clinic and University	7 (1.4)
	Private Clinic, University	18 (3.5)
	Private Clinic	144 (27.9)
	University	82 (15.9)

b) Geographic distribution of the participants

Dentists from all over Iraq responded to the questionnaire. The highest number of participants was from Baghdad (156), the capital of Iraq has the highest number of dentists. The second highest was from Erbil (106). Geographic distribution is presented in Figure 1.

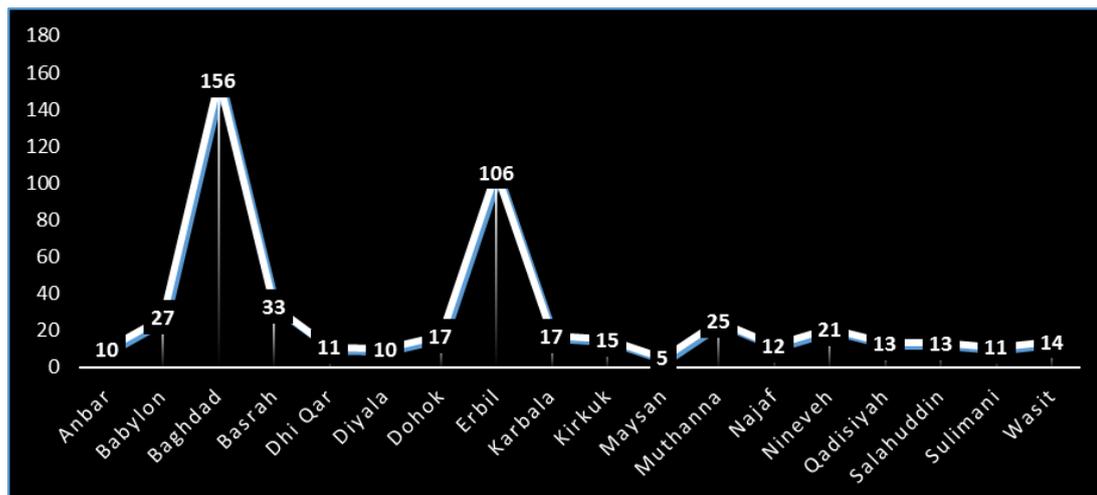


Figure 1: Geographic distribution of the participants

c) Descriptive statistics of the knowledge, fear, and anxiety of Iraqi dentists

The volume of the reliability between the questions was high (>0.7). The first question of the questionnaire asked about fear of getting infected with COVID-19 from a patient and co-worker, 87.2 % answered (Yes). When the survey investigated their nervousness in providing treatment to a patient who is coughing or suspected of being infected with COVID-19, 472 participants out of 516 responded (Yes). For the question, do you want to close your dental practice until the number of COVID-19 cases starts declining, 380 (73.6%) participants responded (Yes). The fourth question asked about Feeling Nervous when Talking to Patients in Close Vicinity, 364 (70.5%) participants responded (Yes). the subsequent question was about fear of carrying the infection from dental practice back to their family, the responses were 493 (Yes). For getting quarantined if getting infected, 68.8% were afraid. The concern and anxiety levels about the cost of treatment, 164(31.8%) only answer (yes). A considerable number, 402 participants, was scared when hearing about the mortalities of COVID-19. The descriptive statistics of fear and anxiety of the dentists about COVID-19 presents in Table (2).

Table 2: Descriptive statistics of fear and anxiety of Iraqi dentists about COVID-19

Questions	Yes		No		Unaware	
	N.	%	N.	%	N.	%
Are you afraid of getting infected with COVID-19 from a patient and co-worker?	450	87.2%	54	10.5%	12	2.3%
Are you anxious when providing treatment to a patient who is coughing or suspected of being infected with COVID-19?	472	91.5%	36	7.0%	8	1.6%
Do you want to close your dental practice until the number of COVID-19 cases starts declining?	380	73.6%	103	20.0%	33	6.4%
Do you feel nervous when talking to patients in close vicinity?	364	70.5%	133	25.8%	19	3.7%
Are you be afraid that you could carry the infection from your dental practice back to your family?	493	95.5%	18	3.5%	5	1.0%
Are you afraid of getting quarantined if get infected?	355	68.8%	151	29.3%	10	1.9%
Are you anxious about the cost of treatment if you get infected?	164	31.8%	303	58.7%	49	9.5%
Are you afraid when you hear that people are dying of COVID-19?	402	77.9%	101	19.6%	13	2.5%
Are you aware of the mode of transmission of COVID-19?	490	95.0%	17	3.3%	9	1.7%

The knowledge and practice of the dentists about COVID19 is demonstrated in Table 3. For the awareness of mode of transmission of COVID-19, the majority (95%) acknowledged that they had awareness, and 83.5% were updated with either CDC or WHO guidelines for cross-infection control about COVID-19. Accordingly, 70.5% inquired about their patients' travel history before performing a dental treatment. Only 36.0% of the participants took their patient's body temperature before dental treatment. About 77% of the participants deferred their dental treatment protocol for patients who show suspicious symptoms. Also 86.6% think that the surgical mask is not enough to prevent cross-infection of COVID-19 while 77.9% thought that the N-95 mask should routinely be worn in dental practice due to the outbreak. The follow-up question was asked whether they wear an N-95 mask while treating their patients. Only 47.9% responded that they wear the mask during treatment. We asked if they routinely follow universal precautions of infection control for every patient. 408 participants responded (Yes) while 82.8% of the participants said that they did not use rubber dam isolation for every patient. When we asked about using high volume suction during treatment of patients, the responses were close between Yes and No (48.3% and 46.5% respectively). Only 24.0% of the participants asked their patients to rinse his/her mouth with anti-bacterial mouthwash before treatment, and 88.8% of the participants washed their hands with soap and water or use sanitizer before and after treatment of every patient. 75.8% of the participants were aware of which authority to contact if they meet a patient with a suspected COVID-19 infection.

Table 3: Knowledge and practice of Iraqi dentists on COVID-19

Questions	Yes		No		Unaware	
	N.	%	N.	%	N.	%
Are you updated with the current CDC or WHO guidelines for cross-infection control regarding COVID-19?	431	83.5%	66	12.8%	19	3.7%
Are you currently asking about every patient's travel history before performing dental treatment?	364	70.5%	127	24.6%	25	4.8%
Are you currently taking every patient's body temperature before performing dental treatment?	186	36.0%	302	58.5%	28	5.4%
Are you deferring dental treatment of patients who show suspicious symptoms?	398	77.1%	83	16.1%	35	6.8%
Do you think surgical mask is enough to prevent cross-infection of COVID-19?	62	12.0%	447	86.6%	7	1.4%
Do you think N-95 mask should be routinely worn in dental practice due to the current outbreak?	402	77.9%	90	17.4%	24	4.7%
Have you ever worn an N-95 mask while treating a patient in your dental practice?	247	47.9%	246	47.7%	23	4.5%

Do you routinely follow universal precautions of infection control for every patient?	408	79.1%	78	15.1%	30	5.8%
Do you use rubber dam isolation for every patient?	70	13.6%	427	82.8%	19	3.7%
Do you use high-volume suction in your practice for every patient?	249	48.3%	240	46.5%	27	5.2%
Do you ask every patient to rinse his/her mouth with anti-bacterial mouthwash before treatment?	124	24.0%	364	70.5%	28	5.4%
Do you wash hands with soap and water/use sanitizer before and after treatment of every patient?	458	88.8%	47	9.1%	11	2.1%
Are you aware of which authority to contact if you come across a patient with suspected COVID-19 infection?	391	75.8%	85	16.5%	40	7.8%

4. Discussion

In this study the survey results showed that 87.2% of participants were anxious about getting the virus from a patient and/or co-worker. This reflects that 73.6% preferred to shut down their clinics when COVID-19 cases start deteriorating. Other studies showed similar results in which dentists feared of getting infected with the virus (Ahmed et al., 2020; Consolo et al., 2020). The fear is ascending by the rapid increase in the number of cases and mortality rates worldwide, and the unavailability of a vaccine or effective medicine for the virus remains unclear and increases the fear. From an ethical point of view, the guilt of being the reason for transmitting and spreading the disease to the patients and ultimately to their families, and potentially being the reason for someone's death cannot be expressed by words. Therefore, dentists have the responsibility and the obligation to prevent such an unpleasant incident and some of them closed their clinics.

Most of the dentists were feeling anxious (91%) when treating their patients who cough or are suspected to be infected with COVID-19. In general, individuals who are sneezing, or with any respiratory symptoms, feel discriminated by the community. Chinese people felt the same feeling following the spread of COVID-19 in Wuhan, China (Devakumar et al., 2020). However, it is of great importance to give attention to this matter and pursue health care directly if infected (Roy et al., 2020).

A high percentage of the participants (70%) state that when they talk to a patient in a small place, they felt nervous because chances of getting the virus can further increase with a close distance. It should be noted that the recommended distance by CDC is six or more feet (HCP, CDC, 2019). Taking this note into consideration, talking to patients in a distance less than that can be overwhelming and stressful for the dental practitioners.

Fear of the possibility of transmitting the disease from the dental clinic back to their relatives had the highest percentage (95.5 %) among the participants. Other studies showed similar results with the family being the center of concern of the frontline doctors and healthcare providers (Urooj et al., 2020). In a study performed in Toronto that focused on the experience of the 2003 SARS-CoV1 outbreak, the healthcare workers had the severest traumatic stress among other people. In the same study the Impact

of Event Scale (IES) was used to measure the traumatic stress. The results in the study indicated that healthcare individuals who have children significantly have higher score on the IES (Maunder, 2004). Another study which is also related to SARS-CoV-1 outbreak, showed the greatest distress was among nurses and doctors who have children (Nikell et al., 2020). The fear of being quarantined as a result of an assumed or a real disease is a normal fear which was frequently seen among the dentists. Anxiousness about the cost of treatment was not high because these costs are covered by the governmental hospitals in the country, therefore financial problems were considered as an unimportant issue.

Coronavirus is very easily transmittable, therefore the majority of the dentists' express fear of transmission and death. Most of the dentists follow the guidelines of the current CDC or WHO for cross-infection control regarding COVID-19. This indicates that they have good knowledge in this field to decrease cross-infections, including asking patients about their previous travel. Patients with COVID-19 usually have a fever, so it is useful to take the body temperature of patients before treatment in the clinic in order to protect the staff and other patients. Unfortunately, the study revealed that half of the Iraqi dentists do not take their patients' body temperatures. Deferring the dental treatment of COVID-19 symptomatic patients is essential to prevent the spread of the infection. The study found that 77% of the dentists are doing this. An N-95 mask was recommended by WHO as a protection against COVID-19 during daily practice to prevent contamination from droplets in air. This contact is unavoidable so surgical masks are not sufficient for this purpose (Mulder, 2020). The dentists in this study have the related information but routinely do not use their masks. The pandemic COVID-19 is a life-threatening and highly transmissible disease; therefore, health care professionals have the responsibility to care about the population and preserve high standards of care and infection control (Ather et al., 2020).

In this study most of the dentists follow the universal precautions of infection control for each patient but some do not use the rubber dam or high vacuum suction for their patients which may increase the number of droplets in the air. This is a significant point and needs modification in the dental practices. Positive practice by the dentists which is the use of the sanitizer before and after treatment as a precaution measure is highly recommended (Ather et al., 2020). Public health and social entities, whether personalities, institutions, communities or governments, are responsible to slow or stop the spread of COVID-19 (Sohrabi et al., 2020). Therefore, any dentist who has encountered a patient with a suspected COVID-19 infection must contact the proper authorities. This study showed that the dentists participated in the research are aware of this responsibility and do the required actions when they meet an infected patient.

5. Conclusion

Noticeable fear and anxiety among Iraqi dentists were seen because of the pandemic. The dentists prefer to shut down their clinics until the decline of the pandemic. The main fear was from getting infected, and the fear of transmitting the disease to their families was also clearly understood. Most of the dentists were updated with either CDC or WHO guidelines for cross-infection control regarding COVID-19. Iraqi dentists have good knowledge in this field to decrease cross-infections. Still, they need more modifications in their practice such as taking body temperature of each patient before treatment. Other modifications are using rubber dam for each patient and asking their patients to rinse his/her mouth with anti-bacterial mouthwash before treatment to prevent the spread of the coronavirus.

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