Sys Rev Pharm 2021;12(2):209-218
A multifaceted review journal in the field of pharmacy

Evaluation Of Responsiveness, Adaptation& Alertness For Sample Of Iraqi Dentists During COVID-19 Crunch/ (Sample From Baghdad City)

Dunia W. Sabea

Department of Oral Diagnosis; College of Dentistry/Aliraqia University/Iraq
Corresponding Author: dunia_sabea@aliraqia.edu.iq

ABSTRACT

Aim of the study

The aim was to estimate the level of responsiveness, attitude & adaptation; statement of fear, emotions and alertness in the sample of Iraqi dentists in their privet clinics and their expectations about pandemic effects upon their job regarding COVID-19 crisis.

Sample & Method

A cross-sectional study based on assessment and analysis of the data obtained from online google form questionnaire consisted from three parts including 15 questions was sent via what's up professional groups to a sample of Iraqi dentists who had worked in privet dental clinics in the capital, Baghdad in 30, May 2020, asked to complete it within 20 days. Using a descriptive statistics method to assess and analyze data using SPSS-19.

Results

From a total of 157 dentists who received the google form, only 124(93.93%) those who continue to open their clinics and worked were represent the study sample. From the responders 56(45.16%) open their clinics because they refused to give up their patients and 11(8.87%) dentists refused to receive or exam any suspected patient. About 92(74.19%) were aware for COVID-19 crises with good updated knowledge of virus it's incubation period, symptoms and ways of transmission and contamination. Only 58(46.77%) dentists were using excellent contamination preventive measures (rubber dam). About 71(57.25%) having bad, negative impression on their employment. And 78(62.90%), were satisfying about their way of management.

Conclusion

Iraqi dentists were awake of corona disease's symptoms, means of spread, infection control measures in their private clinics, but we can't deny that the COVID-19 crisis is consuming a vastly undesirable effect on the dentists' action.

Keywords: COVID-19, infection control, dentistry.

Correspondence:
Dunia W. Sabea
Department of Oral Diagnosis; College of Dentistry/Aliraqia University/Iraq
*Corresponding author: Dunia W. Sabea email-address:
dunia_sabea@aliraqia.edu.iq

INTRODUCTION

The innovative corona virus was originally named Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2) (COVID-19—Coronavirus disease 2019), originated in China, December 2019[1]. Next slight months, in March 2020, produced a complete health emergency[2]. Soon after, the World Health Organization (WHO) announced COVID-19 a pandemic. This pandemic will signify the chief medical and community health challenge in many years [3]. It stood evidenced that COVID-19 could persist also stay on hold on behalf till 180 minutes in vaporizer, with a drop in its contagious titer like the SARS-CoV-1 virus [4]. COVID-19, has confirmed group of symptoms between nil to severe [5]. The development stage of COVID-19, which is the period between exposure to the virus and symptoms exterior, is on average 5-6 days, but can be as long as 14 days[6]. Current verification recommends that COVID-19 spreads among community over polluted objects or surfaces, or close connection with infected people (less than one meter) from person to person and is commonly transmitted via hands, saliva, (mouth), nasal droplets, (nose) when patient coughs, sneezes, speaks or sings, for example and if there is contacts with contaminated surface [3,6]. Dental procedures can produce very small droplets called "aerosol generating procedures" that are able to stopover up in the air for longer times[4]. When such dental procedures are directed on persons infected with COVID-19 in health services, these aerosols can hold the COVID-19 virus. Therefore, a liable individual might inhale or breath aerosols, and may possibly developed infection if the vaporizers enclose the pathogens in adequate amount, infection will result [5,6]. These aerosols can in theory be attracted by others if they are not putting appropriate personal protective equipment(PPE) [7]. Inopportunely, there is no antiviral preparation existing on the souks, Thus, patients have to depend on sympathetic treatment like vit. (A, C and D) with broad care till the immunity's resistant able to eliminate the contagion[8]. Dentists are in adjacent closeness and face-to-face connection, with patients so, bare the germ located in patients' mouth and respiratory bands. About the dental procedures, which include the application of long vaporizer-causing techniques, dentists' hazard of COVID-19 contamination is on peak between entirely healthcare careers. Patients with COVID-19 were typically ill and did not submit to any selected dental techniques due to their weakening signs[9]. In COVID-19 severe infection, beside drug therapy, might possibly add antagonistic results regarding oral condition. Also fungoid contagions, oral herpes simplex virus, HSV-1 and gingivitis may be result due to weakened immune scheme. Thus, such patients need for both infection and pain control [10,11]. This pandemic causes a massive tension on all public oral health care workers, dentists are greatly estimated to progress nervousness from the present COVID-19 crisis and their behavior towards their patients' have considerably been changed[12]. Thus, minus public shared occasions resulted from this pandemic present a suggestion to be certain of that there will be proliferation

of people's requirement for dental management after COVID-19.[13]

Sample and Method

A cross-sectional study was done on 30, May 2020 by questioner[14]. An online google form reached to 157 dentists, through a professional groups asked them to fill it within 20 days. It was consisted of three separated parts including 15 questions, data were collected from dentist's responses. Our target was dentists who work in private clinics in the capital, Baghdad, whether they were general practitioners or specialist dentists and don't care about their personal, demographic data like, their age, gender or degree but our interest was to evaluate the criteria mentioned in the online form. In the first part, 4 questions were planned for an evaluation to the level of dentist's responsibility and how they were behaving with their patients during this condition, their professional attitude. In the second part of the form the 6 questions were put to investigate the level of their updating knowledge on novel COVID-19 like, virus's incubation period, symptoms, modes of transmission with the effective preventive measures. While third part 5 questions were designed to evaluate dentists' awareness towards COVID-19, and if they are fear from getting infection, their emotional feelings with evaluation to the risk of their career, Iraqi dentists' expectation about the future of dentistry after the pandemic and finally the level of satisfaction. Data were collected after 20, June 2020 and study sample was defined on the bases of complete, correct filled form for all dentists who continuing to open his/her clinic and works.

Statistical Analysis

Questionnaires with less than 90% of completed answers were excluded. The answers were recorded and processed using the Statistical Package for Social Sciences (SPSS) version,19 to describe data and all other variables. Descriptive Statistics (mean, Std. Deviation and Percent). Pearson correlation coefficient and T -test. Regression analysis, ANOVA table, F test, stepwise regression, T- test. Significant level (0.05, 0.01).

RESULTS

This study included 157 dentists, who received online google form in the study duration from 30, May 2020 and had 20 days to complete filling. Since the system starts with a question 'if the participant continues to open his/her clinic and work, 25(15.92%) were record they closed their clinics completely because of fair from COVID-19 infection so, excluded from the study. From the remaining 132(84.08%) dentists who continuing open their clinics and work, and on the bases of complete correct filled form, 8(6.06%) dentists were excluded and only 124(93.93%) considered as the study sample. Those 124 dentists, replayed the first-level questions as, 56(45.16%) who refuse to close their clinics because they refused giving up their patients, 32(25.80%) work in the center and the employer instructions were continuing to open, 21(16.93%) dentists had a well-provided clinic and were continue with confident of avoiding infection, 15 (12.09%) dentists need to continue working. For the 2nd. to 4th. the question in the same first level about 70% of our sample dentists were treating their patients all types of required dental treatment, while other 30% manage just as an urgent case that's why about 95% of them called their patients themselves and explain why they postponed their previous appointment. When there was a suspected infected patient about 53% of dentists receive him, treat him as usual but with more PPE while 9% refuse such a patient. In the second level of the questionnaire, the majority of dentists (74%) were aware and conscious of COVID-19 crises, good updated knowledge for the incubation period (79%). All of them knew that sore throat and dyspnea are corona's symptoms; 98% recorded fever, headache, 95% wrote cough, 90% fatigue, 71% joints pain, and 52% complaining of diarrhea. Just 48% were alerted that aerosol represents the most common mode of COVID-19 transmission whether it results from the patient or certain dental procedures. Also, 41% chose direct, and10%, of our responders, chose an indirect method of infection. Unfortunately, only 47% of the study sample using PPE with a rubber dam and autoclave as a preventive method for infection control during a pandemic. About 38% used just PPE with autoclave for sterilization. As adaptation or changing during a crisis, 18% of our dentists doubled their old method and restricted personal protective measures for staff with increasing distance between patients who put the mask in a well-ventilated waiting room and about 44% using same old method with rubber dam for any needed patient. In the third part of the questionnaire, about 65% of our dentists were terrified from receiving an infection with corona. About 57% from responders' had a negative impression on their employment, due to a reduced number of daily treated patients while 11% from them afraid of income reduction or difficulty in finding dental materials. For the risk of a dentist's career, 65% of our sample answered it's very risky. The last question around satisfaction on their way of management, during a pandemic, 63% were satisfied. All the above results are shown in tables-(1,2,3) in detail.

If you are continuing to open and work in your privet dental clinic and if you don't mind please, fill this form completely (does not contain any personal data neither name nor address).			
First level for dentists' responsiveness and their attitude, behavior, towards patients			
1. Why Do you open and continue to work in your clinic?			
Never left my patients with complain. 56 (45.16%)	I'm work in privet center& employer instructed me to work. 32 (25.80%)	I have the confidence to avoid infection& continue work with well provided, prepared clinic. 21(16.93%)	Need to continue working. 15 (12.09%)

2. Are you treat just an emergency cases and postponed the others?	Yes 38 (30.64%)	No 86 (69.35%)	
3. Did you contact your patients personally and explained to them why you are postponed their previously-taken appointments?	Yes 36(94.73%)	No 2 (5.26%)	
4. In case of suspected infected patient complaining from dental pain and need your treatment, will you?			
Receive him& do your job By yourself	Receive him and ask one of your working team to treat him?	Refer him to hospital for doing Corona test and give him analgesic?	Refuse to examine and even talk with him?
66 (53.22%)	5 (4.03%)	42 (33.87%)	11(8.87%)

Table-1 Shows level of responsiveness and attitude (first axes).

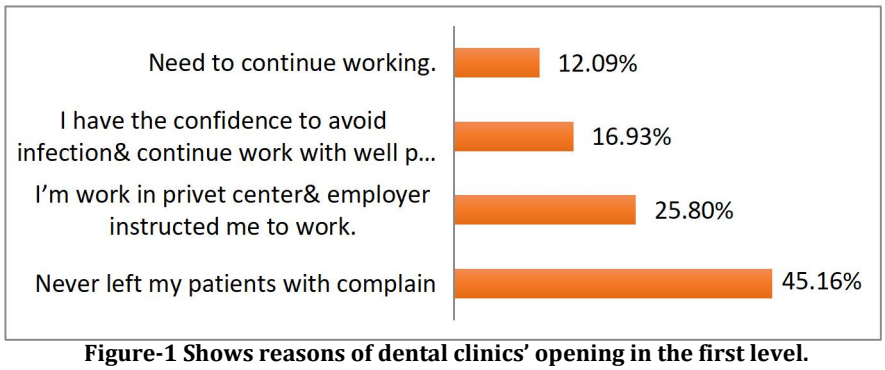

Figure-1 Shows reasons of dental clinics' opening in the first level.

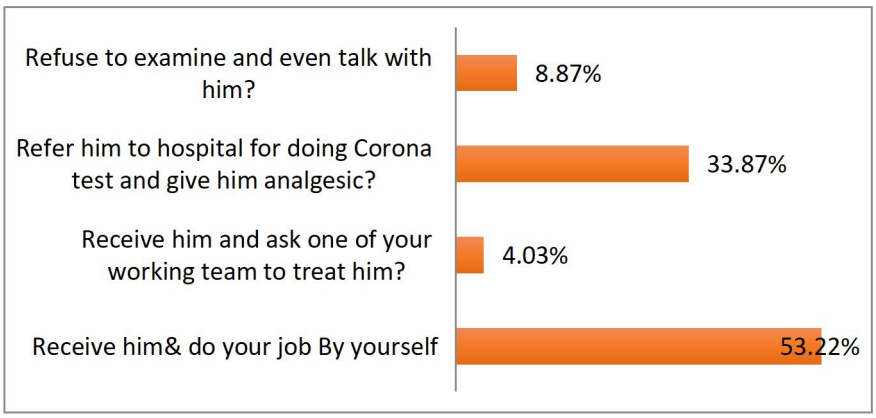

Figure-2 Shows dentists' reaction when they had a suspected patient.

Second level for dentists' knowledge and updating about COVID-19							
5. Are You Updated information regarding COVID-19 with WHO and/or Centers for Disease Control and Prevention CDC?			Yes 92 (74.19%)			No 32 (25.80%)	
6. How many days the incubation period of COVID-19 will be from? Choose only one answer							
7-15 days 98 (79.03%)			5-10 days 26 (20.96%)			1-20 days 0	
7. Most common corona disease symptoms were? You can choose more than one answer							
Fever 122(98.38%)	Cough 119(95.96%)	Fatigue 111 (89.51%)	Dyspnea 124(100%)	Headache 122 (98.38%)	Sore throat 124 (100%)	Diarrhea 65 (52.41%)	Joints pain 88 (70.96%)
8. The most common mode of transmission of COVID-19 in dentistry? You must choose one answer.							
Direct contact by cough (mouth), sneezing (nose) and hand shaking? 51 (41.12%)			Indirect contact from an infected objects and contaminated surfaces? 13 (10.48%)			Aerosol from infected patient or instruments in the dental clinic? 60 (48.38%)	
9. Which preventive, infection control methods has used within COVID-19 pandemic in your clinic? choose the suitable answer							
1. Personal protective equipment PPE Gloves, surgical masks, cap and glasses, disposable protective face shield + Autoclave 47(37.90%)			2. 1. + Usage of elastic barrier segregation for each patient 58(46.77%)			3. 1. + Rinse fingers by detergent and then disinfectant before& after each treated one 17(13.70%)	4. Others (please, write it) One using Ozone& the second use 0.5% sodium hypochlorite 2 (1.61%)
10. What are the changes you doing in your clinic for adaptations of COVID-19 crisis? choose more than one.							
1-More distance bet. patients in good ventilated waiting room and less working hrs. 28(22.58%)			2- More restricted personal protective measures for staff & Doubled the old method before? 23(18.45%)			3- Like old method but using rubber dam with each needed patient 54(43.55%)	4- As usual, nothing changes. 19(15.32%)

Table-2 Shows the level of knowledge and updating (second axes).

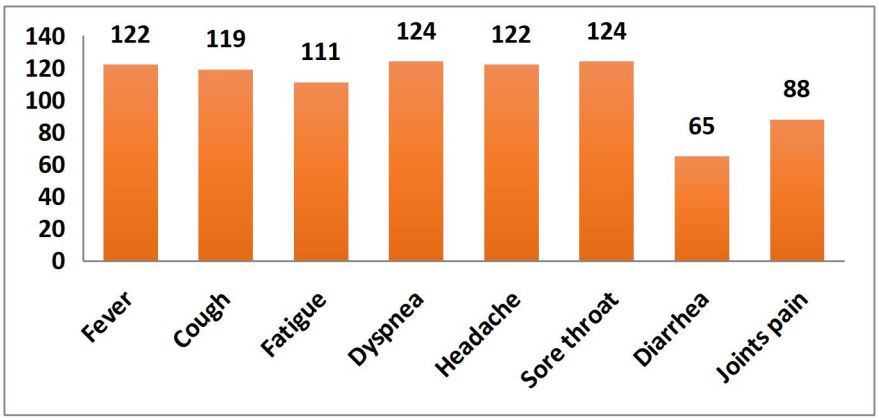

Figure-3 Shows the most common corona disease's symptoms.

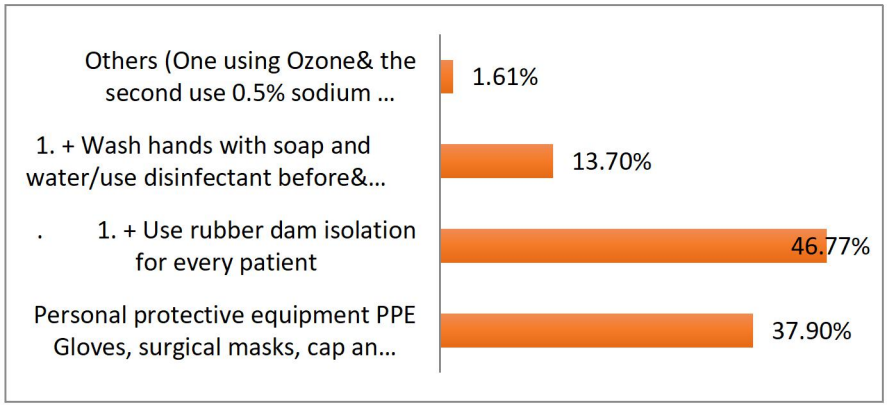

Figure-4 Shows types of preventive methods has used within COVID-19 pandemic.

Third level for evaluation of awareness and emotions in the dentists' sample

11. Are You Terrified from Receiving Corona Diseased on or after your management? Choose only one answer	Yes	No
	80 (64.51%)	44 (35.48%)

12. Which of the resulting passions do you sense once thoughtful in COVID-19? Choose only one answer			
Fear from death? Worry from↑↑ in cases?	Afraid from infection to the family?	Anger from the absence of well-organized health system?	Relax with precautions waiting↓↓in cases?
51 (41.12%)	41 (33.06%)	3 (2.41%)	29(23.38%)

13. What are your expectations for COVID-19 pandemic imprint on your job? Choose only one answer			
Reduced the number of daily treated patients and need time to convince them.	Better connection with patients?	I have difficulty in finding dental materials and delay in delivery?	Negative feedback on the income and this will effect life obligations?
71(57.25%)	15 (12.09 %)	14 (11.29%)	24(19.35%)

14. Do you believe that dentist had big risk of infection with COVID-19? Choose only one answer		
Very risky 81(65.32%)	Risky 28 (22.58%)	Like other risk in our job 15(12.09%)

15. Are you satisfying about your dental management during COVID-19 pandemic? Choose only one answer with confidence, please		
Yes 78 (62.90%)	No 13 (10.48%)	Maybe 33 (26.61 %)

Table-3 Shows level of emotions and awareness (third axes).

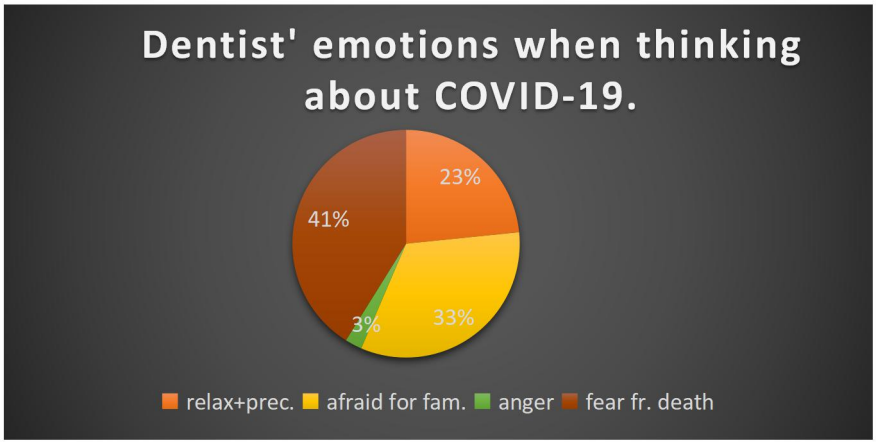

Figure-5 Shows dentists' emotions when thinking in COVID-19.

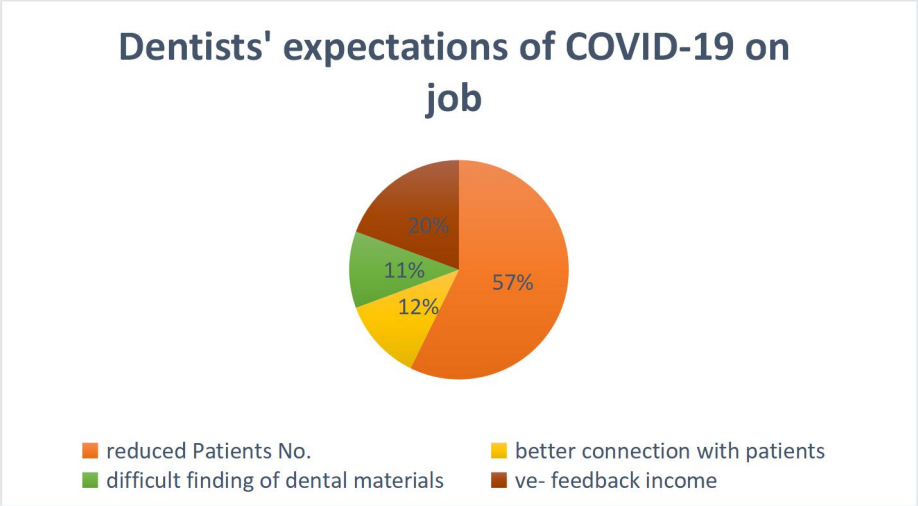

Figure-6 Shows dentists' expectations of COVID-19 on their job.

DISCUSSION

Simulations of contrasting scenarios demonstrate that probable factors effect in a minor top in the beginning of 2020 in self-controlled counties of the north hemisphere and a major top in winter 2020/2021 that's why more researches are required for more understanding to this virus preventive methodes[15]. According to our knowledge this is the first study which search in correlation and significant effect between dentists' behavior, updated knowledge and their awareness and emotions in addition to evaluation and assessment of Iraqi's dentists in levels of responsibility, alerts and attitude with their patients and knowledge updating during COVID-19 pandemic This cross-section, questionnaire-based study gathered, collect and documented information using closed- ended questions easily and carefully then analyze all results obtained from sample of Iraqi dentists' replies. Questionnaire via net proved to be efficient research method for exploration efforts and attracted response[16]. The response rate to the distributed questionnaire in the present study was 94% which is excellent, higher than other regional and national similar studies like (53% Khader et al., 2020; 41% Consolo et al., 2020; 39% Cagetti et al.,2020 and 40% Tam et al.,2004) [26,21,25] and less than (Ahmed et al.,2020 who the respondents' percentage was 97%)[20]. Dentists, similar to several medical care specialists, remain at an amplified hazard of constricting the infection due to their closeness to ill persons. About 25% of participants closed their clinics and suspending dental practice and stop to work due to obvious increase in incidence of Corona and daily confirmed cases, due to fair from transmitting infection from patients to them and to their families later on. our percentage much less than that recorded by other studies like (Maunder et al., 2003; Duruck et al.,2020; Mis´ta and Dziedzic, 2020; Ahmed et al., 2020 and Console et al.,2020) [17-21] who found in their studies that about 90%; 71%; 66% and 42% respectively of their respondents decided not to practice dentistry also for the same reason about their families and/or unwell equipment dental clinic, other logical explanation for this significant reduction in our results may be due to low incidence rate in Iraq comparing studies' local area infected cases. On the contrary, (45%) from our respondents were continue to work in their clinics because they are believing in dental care nobility and refuse to left their patients suffering from pain and complain, this is agreeing completely with other studies like (Mis´ta and Dziedzic, 2020; Toit,2014), who recorded in their studies that dentists' decision to stay working all through the epidemic, was due to noble necessity to be responsible for crucial dental practices, and the health precaution is a dynamic standard in the dentistry[19,22]. About 17% had well provided clinic and were continue with confidence of avoiding infection, all remaining 38% continue to work because either they need to work or their employers asked them to continue. For the 2nd. to 4th.

question in the same first level about 70% of our sample dentists were treat their patients all types of required dental treatment electively, while other 30% manage just an urgent case which is much less than emergency treatment percentage of other similar studies, and called their patients personally to explain why they postponed their previous appointment which indicate style attitude toward the patient with aroused consciousness in spite of severe impacted public life and the global economy which were resulted from COVID-19. Such problem leading to suspension of all elective dental care services and limited practice to emergency cases only, this is similar to (Ahmed et al.,2020; Meng et al., 2020 and Guo et al.,2020) [20,23,24] who were in their studies agreeing that in such crisis entirely optional dental management for wholly patients must be postponed till the condition is relapsing or controller. These 70% Iraqi dentists who treating patients electively were knew very well the high risk contamination results from their behavior but also they know exactly that pain was the most common reason for seeking dental care, this problem may be avoided in future by preventive dentistry programs and early treatment intervention. When the patient was suspected, 53% of our sample receive him, treat him as usual but with more PPE while 9% refuse such patient. Permitted for dentists to study the extent of COVID-19, original procedures for certain guide and standardized measures affect the important influence of professional experts on the construction of an academic conclusion to offer dental handling and management or stopped. This necessity for participation is required to remove any guilt feelings.

In the second level of questionnaire 74%, of our respondents were updated knowledge for COVID-19 with CDC &WHO reports, this result high significant than 33%, that recorded by (Cagetti et al., 2020) [25] in spite of high incidence rate of COVID-19 in his country and less significantly than 90%, dentists tracked uninterrupted informative path on COVID-19 recorded by (Ahmed et al., 2020)[20]. Part of our respondents' knowledge was 79%, of them answered the incubation period (7-14) days this percentage was significantly higher than 44%, of the dentists' sample who reported by (Khader et al.,2020)[26]. Despite reports indicating that it could extend up to 24 days but, we have a tendency to accepting with (Ahmed et al., 2020 and supporter et al., 2020) [20,27]. It's essential to understand the proper incubation time owing to its half in process the safe time to treat suspected patient and helps to assess the effectiveness of admission screening and contamination finding as revealed by (Nishiura et al.,2020)28%, of our respondents' updated information was that (sore throat 100 percent, fever 98%, headache ninety eight, cough 95%, fatigue ninetieth, joints pain71%, and looseness of the bowels 52%) square measure the foremost common COVID-19 symptoms severally. this can be incompletely accepting with different studies like (Consolo et al., 2020 Cagetti, 2020; Khader et al.,2020; Farronato et al., 2020; et al. [21,25,26,29] The common between all of them were the participants in their studies requested to possess agonized one or additional warning sign ascribable to COVID-19 most typically fevers, fatigue; raw throat and cough additionally to different minor symptoms like headache; loss of smell; nausea and innate reflex. concerning the foremost common strategies for virus transmission this study shown 48%, of our dentists' participants were alerts; responsive and had a good understanding of what's delineated within the newest warnings from the studies revealed from WHO, or different specialized institutes regarding aerosol results from patient or instruments within the dental clinic and represent main mode of unfold and transmission of COVID-19, followed by 41%, through direct contact and regarding St Martin's Day indirect, means through contaminated surfaces as virus mode of transmission. These results accepting with those revealed regarding basic virus transmission via oral, nasal, and even eye mucosa (cough, sneeze drop and aerosols inhalation transmission) and indirect contact transmission by contaminated instruments and surfaces. (Lizette et al. 2020; Kampf et al. 2020 and Fallahi et al. 2020) [30-32]. different less informative Stadnytskyi et al., 2020[33]. Once revealed that the proportion of exhaled drop nuclei or of metabolic process droplets that evaporate to come up with aerosols, and therefore the infectious dose of viable SARS-CoV-2 needed to cause infection in another person aren't renowned, however it's been studied for different metabolic process viruses. though common clinical manifestations of novel coronavirus infection don't embrace eye symptoms, the analysis of mucosa samples from confirmed and suspected cases of 2019-nCoV suggests that the transmission of 2019-nCoV isn't restricted to the tract, which eye exposure could offer an efficient means for the virus to enter the body [34,35]. Asadi et. Al.,2019 in recent experimental model found that healthy people will turn out aerosols through coughing and talking, and another model urged high variability between people in terms of particle emission rates throughout speech, with magnified rates correlate with magnified amplitude of vocalization[36]. whereas Somsen and his colleagues in 2020, had another experimental study by an optical device optical phenomenon measure employing a spray drop measure system to quantified the number of droplets during a single cough and through speech, However, the authors rely on Lowen et. Al., in 2007, WHO well-tried that grippe virus transmission relies on ratio and temperature thus, the aerosols containing a little concentration of virus in poorly louvered areas, combined with low wetness and warm temperature, may lead to associate degree infectious dose over time[37]. Though there aren't any reportable cases of Coronavirus transmission during a dental setting, given the high transmissibility of the sickness, dental groups ought to be alert and maintain a healthy atmosphere for each the patients and themselves. Therefore, understanding aerosol transmission and its implications in dental medicine is important. Bio-aerosols needed smart preventive technique for each dentists and patients thus, additionally to straight forward precautions, some special precautions ought to even be enforced. The next question within the second level of form regarding that preventive, infection management strategies are used at intervals COVID-19 pandemic? sadly, solely 47% of our respondent's dentists' (less than half), used PPE with a rubber dam, and autoclave for sterilization that is the modest preventive strategies may be used anyplace. An oversized variety of Iraqi participants' dentists' reportable mistreatment elementary contagious control methods just resembling the elastic barrier for each patient and this is often will be an enormous disappointment since the utilization of rubber dams can considerably minimize the assembly of saliva- and blood-contaminated aerosol or spatter, notably in cases once high-speed hand pieces and dental audible devices square measure used. it's been reportable that the

utilization of rubber dam might considerably cut back suspended particles in about 3-foot diameter of the operational field by 70%[38]. Once rubber dam is applied, additional high volume suction for aerosol and spatter ought to be used throughout the procedures beside regular suction. If rubber dam isolation isn't probable manual devices, like those used for periodontics' scaling, can be used so as to reduce the generation of aerosol [9,38]. Regarding 38% from our respondents' not used rubber dam, mistreatment simply PPE like before pandemic and hand laundry for every patient. However, WHO announced dentists' high risk of COVID-19 ought to take different measures than that used before the pandemic. In the last question of the second half and as a results of pandemic we tend to asked our respondents' dentists regarding their changes or variations toward COVID-19 crisis, provide them over one choice, regarding 44% from their value were doubled the old preventive technique used before the pandemic with more restricted PPE for all operating employees and keep distance between patients in a very sensible aerated space lounge waiting room asking them to wear the mask whereas place suspected patients in adequately aerated single room. Regarding 23% from them, operating less hours within the week with less daily patients. Dentists' have to be aware with 2019-nCoV, with extra-protective measures adopted throughout the work, so as to prevent the transmission of 2019-nCoV. As dental tending facilities begin to restart elective procedures in accordance with local condition, there are precautions that should continue with this pandemic, all dental care workers, should take special precautions in routine apply ranging from analysis of patients, dental clinics area unit suggested to ascertain recheck to suspected and record the temperature of each employees and patient as a routine procedure, hand hygiene, PPE, pre dental procedures mouth rinse, rubber dam isolation, removal/filter of contaminated air, environmental surface medical aid and management of medical waste [23,38].

Within the third last part of the form within the current study, analysis for dentists' worry associate degreed emotions was done by asking if they're scared of obtaining infection with COVID-19 from an infected patient? this speedy unfold of COVID-19, that has exaggerated ample individuals universal, starting from seperation and segregated to mortality has stemmed in sizable emotional tension and worry, sizable amount of our respondents' 41%, feel worry from outbreak, and thinking in death. The reply is comparable to the observation of remainder of the people wherever individual's area unit fearful of obtaining disease from alternative one within the public in the company of a quickly emerging pandemic. alternative 23% They were relaxing with precaution and waiting reduction in cases, otherwise 33% from them afraid from transmitted infection to the family, there have been 3 dentists' felling angry from the health system in Iraq. Worry and nervousness are dominant feelings that will be related to the condition of COVID-19 pandemic by all media style. Gentle anxiety is natural and promotes preventive and protection behavior. Additionally, there's no vaccine or approved treatment, till know, nursing employees managing ill individuals always range element at a better risk of determination transferable illness, represent a motivating psychosomatic tax. This result easy-going with Ahmed et al. 2020, who found a substantial range of 87% dentists from 30 dissimilar nations were anxious from receiving COVID-19 disease. Similarly, Consolo et.al.,2020 who recorded 85% of his dentists' sample were worried about getting COVID-19 during their dental care. [39-42] Previous studies on similar infectious diseases validated numerous causes prominent to mental shock in healthcare workers including the fear from infection during management of a contagious patient, or a contagious a family member. Usually they are not only had fear alone but also high level of depression and nervousness, although its good preparation for future outbreak[40]. More than 50% of this study sample believe in negative imprint of this crisis on the dentistry career and next future of the job, about 57% from dentists answered that COVID-19 led to reduce total working hours and less number of dental complaining patients, mainly because patients stay apprehensive of get infection of COVID-19 throughout a dental package and need time to convince them in treatment result from the increasing hazard of infection by dentists. While 11%, replayed by negative feedback on the dental materials availability or 19%, negative on the income of the dentist (financial), 12% answered that they have better connection with their patients because they spent more time with them due to less daily patients visit the clinic. Those results similar to results founded by Consolo et al., 2020, when recorded about 75% of his responders informed that there has been a tremendously bad influence on their job; 67% considered PPE very important; 37% Professional rhythm slow down and 23% better connection with patients. The list of problems further includes millions of losses in revenue sources; economic instability[43].

Around the threat sensitivity of getting virus by the main stream of the dentists 65% answered that the dental work is a high risk career. About 23% of the dentists replayed to be risky and only 12%, were full with positive energy and appeared additional smart and believed that every dental visit had bound risk of infection and this can be like any other risk of transmission in the dentistry. Furthermore, in areas with COVID-19 community transmission. WHO, advises that health workers and caregivers working in clinical areas should continuously wear a medical mask during all routine activities throughout the entire shift[2]. Additional nations and governments endorse aerial safeguards for some conditions including the caution of COVID-19 patients. However, Greatest managing applies be subject to precise patient authorizations. This might be clarified by the point that diseases like COVID-19 can cause an excessive doubt around individual's career, so lead to a transitory financial hesitation. Really, while indirectly evaluated in the current study, it is probable to theorize that entirely causes like the strictness control events assumed by rules to decrease the danger of contamination inside healthiness caution situations, the local financial disorders, the observations of another job, all with the insecurity around individual's career with the prospected review, result in undecorated mental tension, like depression[44,45]. Finally, about 63% of Iraqi's dentists who respond were satisfying about their dental management during COVID-19 pandemic, 10% not satisfied, while others 27% chose maybe? Unfortunately, we can't find similar results about dentists to compare with our result. But we can have explained as that constancy is unrelated just to the economic benefit, moreover by an extensive variety of additional profits

which are critical for dentists' progression, pleasure and feeling of personality. Consequently, this recommend the application of public care with appreciation and safety programs to diminish condition with bad unwanted possibilities for the period of the unsettled socio-economic deviations, when the dentists' do their jobs and obligations with all these challenges in a country like Iraq and Iraqi's community surely they are satisfying about themselves when you ask them[46]. From all above we can find significant correlation (0.197) between the effect of the third constant emotional axes and the first variable axes of behavior and attitude although it's weak. By using ANOVA-test we find that Regression is significant, 0.029(≤ 0.05) between the first and third axes while there is no significant relation, 0.065 between the first and second axes in other expression we can say that updating knowledge of COVID-19 is not effective enough to change dentists' emotions and their effect on behavior and attitude. We use stepwise regression to find the best estimated equation we find, this equation included the constant first axes behavior and attitude with one depended constant third axes only.

CONCLUSIONS

Iraqi dentists were conscious, aware and responsive towards their patients' COVID-19 symptoms, mode of transmission, infection control measures in their private dental clinics, but we can't deny that the COVID-19 crisis is having a strong undesirable effect on the dentist's action but like other Iraqi people their high adaptation ability in addition to all that the incidence rate of infection at the time of questionnaire and dentists' responses in the last June, was much less than today in Iraq. All these factors in addition to novelty of COVID-19 make updating to medical information not convincing for most health workers and make these dentists continuous with their usual daily work and this is quite reasonable in eastern societies. Definitive screening and infection preventive protocol with guidelines should be sent to all dentists during this COVID-19 pandemic, through academic dental colleges to make sure that they are well informed and aware of the best practices and recommended disease management approaches and necessitating improvement of the practice in private dental clinics under observation of both Higher Education and Health Ministries. Researchers worldwide are motivated to understand the mechanism of infection' reservoirs, pathogenesis, modes of spread and finally effective protection behavior and until appearance of cured therapy or vaccine.

Acknowledgements

The author is sincerely thankful to Professor Doctor Basim S Msallam for his unlimited support and generous help in statistical analysis of this study.

REFERENCES

1. Lu, R.; Zhao, X.; Li, J.; Nlu, P.; Yang, B.; Wu, H.; Wang, W.; Song, H.; Huang, B.; Zhu, N.; et al. Genomic characterization and epidemiology of 2019 novel coronavirus: Implications for virus origins and receptor binding. Lancet 2020; 359, 565–574.
2. Worlds Health Organization. Advice on the Use of Masks in the Community, During Home Care and in Health Care Settings in the Context of the Novel Coronavirus (2019-nCoV) Outbreak. Novel coronavirus(2019-nCoV) situation report-22 -data as reported by February 11, 2020.
3. Van Doremalen, N.; Bushmaker, T.; Morris, D.H.; Holbrook, M.G.; Gamble, A.; Williamson, B.N.; Tamin, A.; Harcourt, J.L.; Thornburg, N.J.; Gerber, S.I.; et al. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. N. Engl. J. Med. 2020; 382, 1564–1567.
4. US Public Health Response to COVID-19 and Chronic Disease: Continuing the Commitment to Improve Population Health. CDC. 2020.
5. Zu, Z.Y.; Jiang, M.D.; Xu, P.P.; Chen, W.; Ni, Q.Q.; Lu, G.M.; Zhang, L.J. Coronavirus Disease 2019 (COVID-19): A Perspective from China. Radiology, 2020.
6. Yu P, Zhu J, Zhang Z, HanY. A Familial Cluster of Infection Associated with the 2019 Novel Coronavirus Indicating Possible Person-to-Person Transmission During the Incubation Period. J Infect Dis. 2020; 221(11): 1757-61.
7. Symptoms of coronavirus. National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases. Centers for Disease Control and Prevention. Updated May 8, 2020.
8. Zhang, L.; Liu, Y. Potential interventions for novel coronavirus in China: A systematic review. J. Med. Virol. 2020; 479–490.
9. Samaranayake P and Peiris M. Severe Acute Respiratory Syndrome and Dentistry(A retrospective study) Journal of the American Dental Asso(1939). 2004; 135(9):1292-30.-1302, SE
10. Guan, W.; Ni, Z.; Hu, Y.; Liang, W.; Ou, C.; He, J.; Liu, L.; Shan, H.; Lei, C.; Hui, D.S.C.; et al. Clinical Characteristics of Coronavirus Disease 2019 in China. N. Engl. J. Med. 2020.
11. Bodard AG, Deneuve S, Desoutter A. Oral manifestation of Covid-19 as an inaugural symptom? J Oral Med Oral Surg. 2020; 26:18.
12. Ng, K.; Poon, B.H.; Puar K, T.H.; Quah, J.L.; Loh, W.J.; Wong, Y.J.; Tan, T.Y.; Raghuram, J. COVID-19 and the Risk to Health Care Workers: A Case Report. Ann. Intern. Med. 2020.
13. Fini MB. What dentists need to know about COVID-19. J Oral Oncology, 2020; 105, 104741.
14. Stehr-Green, P.A.; Stehr-Green, J.K.; Nelson, A. Developing a questionnaire. FOCUS Field Epidemiol. 2003; 2: 1-6.
15. Neher, R.A.; Dyrdak, R.; Druelle, V.; Hodcroft, E.B.; Albert, J. Potential impact of seasonal forcing on a SARS-CoV-2 pandemic. Swiss Med. Wkly. 2020; 150.
16. Lydeard S. The Questionnaire as a Research Tool. Family Practice, 1991; (1): 8.
17. Maunder, R.; Hunter, J.; Vincent, L.; Bennett, J.; Peladeau, N.; Leszcz, M.; Sadavoy, J.; Verhaeghe, L.M.; Steinberg, R.; Mazzulli, T. The Immediate Psychological and Occupational Impact of the 2003 SARS Outbreak in a Teaching Hospital. CMAJ Can. Med. Assoc. J. J. Assoc. Medic. Can. 2003; 168, 1245–1251.
18. Duruk, G.; Gümü¸sboga, Z.¸S.; Çolak, C. Investigation of Turkish Dentists' Clinical Attitudes and Behaviors towards the COVID-19 Pandemic: A Survey Study. Braz. Oral Res. 2020, 34.
19. Mis´ta MT and Dziedzic A. 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 2020; 17, 4703.
20. Ahmed MA, Jouhar R, Ahmed N, Adnan S, Aftab M, Zafar MS and Khurshid Z. Fear and Practice Modifications among Dentists to Combat Novel Coronavirus Disease (COVID-19) Outbreak. Int. J. Environ. Res. Public Health. 2020; (17): 2821.
21. Consolo U, Bellini P, Bencivenni D, Iani C, and Checchi V. Epidemiological Aspects and Psychological Reactions to COVID-19 of Dental Practitioners in the Northern Italy Districts of Modena and Reggio Emilia. Int. J. Environ. Res. Public Health. 2020; 17(10): 3459.
22. Toit J.D.; Jain S.; Montalli, V.; Govender U. Dental Students' Motivations for Their Career Choice: An International Investigative Report. J. Dent. Educ. 2014; 78, 605–613.
23. Meng L.; Hua F.; Bian Z. Coronavirus Disease 2019 (COVID-19): Emerging and Future Challenges for Dental and Oral Medicine. J. Dent. Res. 2020.
24. Guo, H.; Zhou, Y.; Liu, X.; Tan, J. The impact of the COVID-19 epidemic on the utilization of emergency dental services. J. Dent. Sci. 2020.
25. Cagetti MG, Cairoli JL, Senna A. and Campus G. COVID-19 Outbreak in North Italy: An Overview on Dentistry. A Questionnaire Survey. Int. J. Environ. Res. Public Health 2020; 17, 3835.
26. Khader Y, Al Nsour M, Al-Batayneh OB, Saadeh R, Bashier H, Alfaqih M, Al-Azzam S, Al-Shurman BA. Dentists' awareness, perception, and attitude regarding COVID-19 and infection control: A cross sectional study among Jordanian dentists. JMIR Public Health and Surveillance. 2020; 18798.
27. Backer, J.A.; Klinkenberg, D.; Wallinga, J. Incubation period of 2019 novel coronavirus (2019-nCoV) infections among travelers from Wuhan, China, 20–28 January 2020. Euro Surveille. 2020; 25.
28. Nishiura H, Jung SM, Linton NM, Kinoshita R, Yang Y, Hayashi K, et al. The Extent of Transmission of Novel Coronavirus in Wuhan, China, 2020. J Clin Med. 2020; 9(2): 330.
29. Farronato M, Boccalari E, Ettore Del Rosso E, Lanteri V, Mulder R and Maspero C. A Scoping Review of Respirator Literature and a Survey among Dental Professionals. Int. J. Environ. Res. Public Health 2020; (17): 5968.
30. Lizette R., Nisi M., Gabriele M., Graziani F. COVID-19 Transmission in Dental Practice: Brief Review of Preventive Measures in Italy. J. Dent. Res. 2020.
31. Kampf G., Todt D., Pfaender S., Steinmann E. Persistence of corona viruses on inanimate surfaces and its inactivation with biocidal agents. J. Hosp. Infect. 2020; (104): 246–251.
32. Fallahi H.R., Keyhan S.O., Zandian D., Kim S.G., Cheshmi B. Being a front-line dentist during the Covid-19 pandemic: A literature review. Maxillofac. Plast. Reconstr. Surg. 2020; (42):12.
33. Stadnytskyi V, Bax CE, Bax A, Anfinrud P. The airborne lifetime of small speech droplets and their potential importance in SARS-CoV-2 transmission. Proc Ntl Acad Sci. 2020; 117:11875-7.
34. Belser, J. A., Rota, P. A. & Tumpey, T. M. Ocular tropism of respiratory viruses. Microbiol. Mol. Biol. Rev. 2013; 77, 144–156.
35. Rothe, C. et al. Transmission of 2019-nCoV infection from an asymptomatic contact in Germany. N. Engl. J. Med. 2020.
36. Asadi S, Wexler AS, Cappa CD, Barreda S, Bouvier NM, Ristenpart WD. Aerosol emission and super emission during human speech increase with voice loudness. Sci Rep. 2019; 9:2348.
37. Somsen GA, van Rijn C, Kooij S, Bem RA, Bonn D. Small droplet aerosols in poorly ventilated spaces and SARS-CoV-2 transmission. Lancet Respir. 2020; (8): 567-9.
38. Ge Z, Yang M, Xia J, Fu X, Zhang Y. Possible aerosol transmission of COVID-19 and special precautions in dentistry. J Zhejiang Univ-Sci B (Biomed & Biotechnol). 2020; 21(5):361-368.
39. Samaranayake, L. P., Reid, J. & Evans, D. The efficacy of rubber dam isolation in reducing atmospheric bacterial contamination. ASDC J. Dent. Child. 1989; (56): 442–4.
40. Tam, C.W.C.; Pang, E.P.F.; Lam, L.C.W.; Chiu, H.F.K. Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: Stress and psychological impact among frontline healthcare workers. Psychol. Med. 2004; (34): 1197–1204.
41. McAlonan G.M.; Lee, A.M.; Cheung, V.; Cheung, C.; Tsang, K.W.T.; Sham, P.C.; Chua, S.E.; Wong, J.G.W.S. Immediate and sustained psychological impact of an emerging infectious disease outbreak on health care workers. Can. J. Psychiatry 2007; (52): 241–247.
42. Fazel M.; Hoagwood K.; Stephan S.; Ford T. Mental health interventions in schools in high-income countries. Lancet Psychiatry 2014; (1): 377–387.
43. Adam D, Wu P, Wong J, Lau E, Tsang T, Cauchemez S. Clustering and super spreading potential of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections in Hong Kong (pre-print). Research Square. 2020.
44. Gaffar BO, El Tantawi M, Al-Ansari AA, Al Agl AS, Farooqi FA, Almas KM. Knowledge and practices of dentists regarding MERS-CoV. A cross-sectional survey in Saudi Arabia. Saudi Med J. 2019; 40(7): 714-20.
45. Godinic, D.; Obrenovic, B.; Khudaykulov, A. Effects of economic uncertainty on mental health in the COVID-19 pandemic context: Social identity disturbance, job uncertainty and psychological well-being model. Int. J. Innov. Econ. Dev. 2020, 6, 61–74.
46. Vergara-Buenaventura, A.; Chavez-Tuñon, M.; Castro-Ruiz, C. The Mental health consequences of Coronavirus Disease 2019 pandemic in dentistry. Disaster Med. Public Health Prep. 2020, in press.