

Dentists' Satisfaction About COVID-19 Crisis Management in Their Institution, Iraq, World Health Organization, 2021

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ABSTRACT

INTRODUCTION: In early 2020, the World Health Organization (WHO) declared SARS-COV-2 as a pandemic. Dentists were involved in the fight against covid-19 directly and indirectly. Dentists are more prone to acquire COVID-19 due to the nature of their dental practice. Abiding by institutional, national, and international recommendations depends on satisfaction and belief in these recommendations.

OBJECTIVE: is to determine dentists' satisfaction with their institution, government or WHO management toward the covid-19 crisis and to find the relationship between their satisfaction and some demographic variables.

METHODS: A cross-sectional study was conducted from 2 January to 14 February 2021 by an electronic questionnaire through Google-form. Dentists of all ranks working in a specialised dental centre of Al-Resafa Health Directorate in Baghdad and accepted to participate in this study were included. We measured their satisfaction with management against COVID-19 at institutional, governmental, and WHO levels.

RESULTS: We targeted 648 dentists from 11 specialised dental centres in Al-Resafa Health Directorate, and 586 responded with a response rate of 90.4 %. Most of them aged less than 30 years; females were 356, married were 295, Rotator dentists were 297, and having less than five years of experience 357. We find that 289 (49.3%) dentists were satisfied with their institutional management against the COVID-19 crisis. In contrast, 108 (18.4%) and 159 (27.1 %) were satisfied with the governmental and WHO management of the COVID-19 crisis, respectively.

CONCLUSION: Dentists in the Al-Resafa health directorate are satisfied with their institution's management of the outbreak of SARS-COV-2. This satisfaction is more among women and the younger age group. However, they are dissatisfied with the Iraqi government and WHO management of the COVID-19 crisis.

Key words: COVID-19, Dentist, satisfaction, Iraq.

INTRODUCTION

In December 2019, China witnessed a suspicious cluster of diseased patients manifesting as pneumonia identified to be caused by severe acute respiratory syndrome- corona virus-2 (SARS-COV-2).¹ The World Health Organization(WHO) declared corona virus disease 2019 (COVID-19) public health emergency of international concern on 30 January 2020.² It affected remarkably all aspects of life globally. In early 2020, the WHO declared COVID-19

a pandemic, and by July 2020, over 550,000 deaths were reported worldwide, of them 136,000 were in the USA.³ Almost all countries shut down businesses, social and religious gatherings, travel, and all forms of transportation to halt the spread of COVID-19. Worldwide, people were ordered to quarantine in place, and the world went to a standstill. Unfortunately, while people were quarantined, those with acute and chronic conditions still required medical care and treatment.^{4, 5}

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The disease is transmitted mainly through aerosol from an infected person via talking, coughing or sneezing with close contact of less than one meter. The nature of the practice of dentists put them at high risk of acquiring SARS-COV-2. In addition, many dental procedures produce an aerosol that maximises the risk of virus transmission.⁶

Job satisfaction is a "positive emotional state resulting from the appraisal of one's job or job experience". A dentist's career satisfaction impacts a dentist's performance. It is also closely related to general life satisfaction, as they both reciprocally contribute to an individual's happiness and overall well-being in the community.⁷ One of the predictors for overall patient satisfaction with hospitals is patient experiences in treating the case being identical to expected management given by health care.⁸

Factors associated with dentist satisfaction were doctor-patient relationships, respect, delivery of care, staff, professional relationships, and professional environment. Conversely, another five factors related to satisfaction were personal time, stress, income, practice management, and professional time.⁹ Dentists' satisfaction can also be affected by the experience they have by getting COVID-19.

Quality of healthcare service and patient satisfaction have been affected by the current COVID-19 pandemic. It induced uncertainty and a shortage of medical supplies due to a limited global movement.¹⁰

In most low-resourced countries, healthcare systems already suffer from severe financing shortages, low equity, and unpreparedness to meet the challenges of the current COVID-19 pandemic.¹¹ Universal health coverage (UHC) has been a focus of the global development conversation over the past decade to provide good quality healthcare services to all citizens who need them without causing financial hardship. But UHC does not encounter the resilience in the health system to face epidemic crises and outbreaks, as we have seen during the COVID-19 outbreak. Access to testing sars-cov-2 infection, treatment, and prevention by covid-19 vaccination are viewed uni-

versally as a function of success in the country's health system.¹² Poor healthcare systems in poor countries may aggravate the covid-19 outbreak's impact, limit the capacity to conduct adequate surveillance and control¹³ and affect healthcare services, leading to dissatisfaction. During the outbreak, WHO helped countries, especially low-income ones, and their health system to prepare and respond, providing accurate information, busting dangerous myths, ensuring vital supplies reached frontline health workers, training and mobilising health workers, and searching for a vaccine.¹⁴

There are eight main pillars to stop an outbreak making a cycle: 1) country-level coordination, planning and monitoring, 2) risk communication and community engagement, 3) surveillance, rapid response and case investigation, 4) sealing point of entry, 5) strengthen national laboratories, 6) infection prevention and control, 7) rapid case management, 8) operation support and logistics.¹⁵ All these pillars have taken place by the Iraqi government during the SARS-COV-2 outbreak. However, they need personnel involvement and funding that may exhaust the health system and health workers, including dentists. Engaging healthcare workers, including dentists, is essential for their satisfaction and cooperation, a vital step for success. This study was designed to identify the satisfaction of dentists working at the specialised dental centres in Al-Resafa Health Directorate in Baghdad with the management of the COVID-19 crisis at institutional, governmental, and World Health Organisation levels and find any correlation between participants' satisfaction with some socio-demographic variables.

METHODS

Study design& Setting: A cross-sectional study with analytic elements was conducted from 2 January to 14 February 2021, by an electronic version of a questionnaire through Google-form delivered to all the specialised dental centres of Al-Resafa Health Directorate,

Ethical consideration: The study protocol has

been approved by the research committee of Al-Resafa Health Directorate, abiding by the Ministry of Health's code of ethics in Iraq. The study's objectives were explained to all the participants, and the filled-out questionnaire was considered an agreement to participate. All data were kept confidential and used for this study only. The research management unit of Al-Rasafa Health Directorate provided a letter of support encouraging the dentists to participate in this study that was enclosed with the electronic questionnaire.

Definition of the enrolment criteria: dentists from all ranks, from very junior to most senior, working in a specialised dental centre of Al-Resafa Health Directorate in Baghdad and accepted to participate in this study were included.

Sampling: We included all the specialised dental centres of Al-Rasafa Health Directorate and approached all dentists working there.

The questionnaire: The authors designed the questionnaire form, and it was reviewed by many experts. The form was tested on ten dentists who were not included in the final analysis. The questionnaire consisted of two parts; the first included demographic features like age, gender, job, years of experience, and marital status. The second part included questions about participants' satisfaction with the management of COVID-19 at the institutional, national (Iraqi Health authorities) and international (WHO) levels. The questionnaire form was designed in a google form and distributed to the personal e-mails of all dentists working at the specialised dental centres of Al-Rasafa Health Directorate. Approaching the targets was facilitated and supported by the research management unit of the centre of training and human development and oral-dental division of Al-Rasafa Health Directorate. We distributed 648 forms among the participants and received 586 filled-out forms with a response rate of 90.4 %.

Procedures and outcomes: Participants should choose yes, no, or maybe to show their satisfaction with the management of the COVID-crisis at the institutional, national and international levels. The participants' answers were shown

as percentages. Then we studied the association between these answers and age, gender, job description, years of experience, marital status, number of children and history of having COVID-19.

Statistical analysis: From the excel sheet, answers were coded and transformed to SPSS version 26. Data were shown in figures, tables, frequencies and percentages. Chi-square was used to test the statistical significance for the categorical variables, and the p-value was considered significant if it was ≤ 0.05 .

RESULTS

A total of 11 specialised dental centres of the Al-Resafa health directorate were included in the study. We distributed 648 forms among the dentists, and 586 responded by filling out

Table 1 | Distribution of participants according to demographic and professional features

Demo-professional features		No. (%)
Age	<30 yr	363 (61.9)
	30-39 yr	134 (22.9)
	40-49	63 (10.8)
	≥ 50 yr	26 (4.4)
Gender	Female	356 (60.8)
	Male	230 (39.2)
Job	Rotator	297 (50.7)
	Training dentist	40 (6.8)
	Certificated dentist	65 (11.1)
	Permanent dentist	27 (4.6)
	GP dentist	14 (2.4)
	Master dentist	77 (13.1)
Experience (Yr)	Senior dentist	66 (11.3)
	≤ 5 yr	357 (60.9)
	6-10	83 (14.2)
	11-15 yr	56 (9.6)
	16-20	36 (6.1)
	21-25	25 (4.3)
Marital status	≥ 25 yr	29 (4.9)
	Single	282 (48.1)
	Married	295 (50.3)
	Previous married	9 (1.5)
		586 (100)

GP: general practitioner, Yr: Year, No. : Number

Table 2 | Distribution of participants' satisfaction about their institution, Iraq, world health organisation management to the COVID-19

	YES	%	Maybe	%	NO	%
Participants' satisfaction with their institution's management of the COVID-19 crisis	289	49.3	107	18.3	190	32.4
Participants' satisfaction with Iraqi health authorities' management of the COVID-19 crisis	108	18.4	101	17.2	377	64.3
Participants' satisfaction with the World Health Organisation management of the COVID-19	159	27.1	138	23.5	289	49.3

the form, with a response rate of 90.43%. The majority, 363 (61.9%), were below the age of 30 years. Of all participants, 356(60.8%) were female, 295 (50.3%) were married, 297(50.7%) were rotator dentists, and 357(60.9%) had an experience of fewer than five years, **table 1**.

The study revealed that 289 (49.3%) dentist was satisfied with their institutions' management of the COVID-19 crisis, while the remained were either not satisfied 190 (32.8%) or not sure about their satisfaction 107(18.3%).

Table 3 | Association of participants' satisfaction with their institution management of COVID-19 crisis and their demographic variables

Demo-professional features	Satisfaction about institution management to the crisis				P value	
	Yes	Maybe	No	Total		
Age	<30 yr	160	56	147	363	0.000
	30-39 yr	80	26	28	134	
	40-49	34	19	10	63	
	≥50 yr	15	6	5	26	
Gender	Female	190	65	101	356	0.022
	Male	99	42	89	230	
Job	Rotator	131	45	121	297	0.000
	Training dentist	19	5	16	40	
	Certificated dentist	41	14	10	65	
	Permanent dentist	11	2	14	27	
	GP dentist	9	4	1	14	
	Master dentist	39	19	19	77	
	Senior dentist	39	18	9	66	
	Years of experience	≤5 yr	156	53	148	
6-10	48	19	16	83		
11-15 yr	32	13	11	56		
16-20	18	11	7	36		
21-25	18	4	3	25		
≥25 yr	17	7	5	29		
Marital status	Single	133	45	104	282	0.151
	Married	150	60	85	295	
	Previous married	6	2	1	9	
Children No	Not married/no children	134	45	104	283	0.010
	One-three children	113	51	55	219	
	Four and above	15	2	4	21	
	Married but no children	27	9	27	63	
COVID test result by nasal swab	Negative	158	62	98	318	0.561
	Positive	131	45	92	268	
	Total	289	107	190	586	

Table 4 | Relation of participants' satisfaction with the Iraqi health authorities' management of the COVID-19 crisis and their demographic variables

Demo-professional features		Satisfaction with the Iraq health authorities' management of the crisis				P value
		Yes	Maybe	No	Total	
Age	<30 yr	57	56	250	363	0.005
	30-39 yr	31	19	84	134	
	40-49	13	20	30	63	
	≥50 yr	7	6	13	26	
Gender	Female	65	65	226	356	0.716
	Male	43	36	151	230	
Job	Rotator	44	49	204	297	0.032
	Training dentist	9	3	28	40	
	Certificated dentist	19	16	30	65	
	Permanent dentist	3	2	22	27	
	GP dentist	2	4	8	14	
	Master dentist	15	16	46	77	
	Senior dentist	16	11	39	66	
Years of experience	≤5 yr	59	53	245	357	0.095
	6-10	18	11	54	83	
	11-15 yr	10	14	32	56	
	16-20	6	10	20	36	
	21-25	7	5	13	25	
	≥25 yr	8	8	13	29	
Marital status	Single	53	41	188	282	0.364
	Married	53	57	185	295	
	Previous married	2	3	4	9	
Children No	Not married/no children	53	41	189	283	0.086
	One-three children	42	44	133	219	
	Four and above	7	5	9	21	
	Married but no children	6	11	46	63	
COVID test result by nasal swab	Negative	73	57	188	318	0.004
	Positive	35	44	189	268	
	Total	108	101	377	586	

Of all participants, 377(64.3%) were dissatisfied with the management of the COVID-19 crisis at the national level (Iraqi health authorities), and 289(49.3%) were dissatisfied with the world health organisation management of the COVID-19 crisis, see [table 2](#).

[Table 3](#) shows that age, gender, Job, years of experience, and the number of children have a statistically significant association with the participants' satisfaction with managing the COVID-19 crisis made by their institutions. [Table 3](#)

Also, we found a statistically significant association between the participants' satisfac-

tion with the Iraqi health authorities' management of the COVID-19 pandemic and their age, job, and having COVID infection, but not with gender, years of experience, marital status, and number of children; this is shown in [table 4](#).

While there is no significant relation between dentists' satisfaction with WHO management of the COVID-19 with their age, gender, job, years of experience, marital status, no of children, and COVID test results by nasal swab, [table 5](#).

Table 5 | Relation of participants' satisfaction with their WHO management with the COVID-19 crisis and their demographic variables.

Demo-professional features		Satisfaction with the WHO management of the crisis				P value
		Yes	Maybe	No	Total	
Age	<30 yr	92	78	193	363	0.189
	30-39 yr	39	32	63	134	
	40-49	20	21	22	63	
	≥50 yr	8	7	11	26	
Gender	Female	99	90	167	356	0.305
	Male	60	48	122	230	
Job	Rotator	77	65	155	297	0.059
	Training dentist	6	7	27	40	
	Certificated dentist	22	20	23	65	
	Permanent dentist	7	4	16	27	
	GP dentist	5	6	3	14	
	Master dentist	24	16	37	77	
	Senior dentist	18	20	28	66	
Years of experience	≤5 yr	90	77	190	357	0.341
	6-10	29	18	36	83	
	11-15 yr	12	18	26	56	
	16-20	10	11	15	36	
	21-25	10	6	9	25	
Marital status	Single	73	61	148	282	0.342
	Married	82	74	139	295	
	Previous married	4	3	2	9	
Children No	Not married/no children	74	61	148	283	0.202
	One-three children	63	59	97	219	
	Four and above	9	2	10	21	
	Married but no children	13	16	34	63	
COVID test result by nasal swab	Negative	96	78	144	318	0.083
	Positive	63	60	145	268	
Total		159	138	289	586	

DISCUSSION

SARS-COV-2 outbreak affected many aspects of life, and dentistry is one of the careers that has suffered. COVID-19 affected the working circumstances of dentists, PPE usage, time of procedures, and the number of dentists infected with COVID-19 in Iraq or any country all around the globe.¹⁶

The preventive measures adopted by Iraqi health authorities against SARS-COV-2 infections cast heavy shadows on the dentistry practice. Banning non-urgent dental procedures, closing private dental clinics, implementing

infection control protocols, and other social restrictions have profound psychological, social, economic, and professional impacts.¹⁷

Satisfaction with any policies is essential for abiding by them, and dental practice is not exceptional. In this study, we reported that 64 % of dentists are dissatisfied with the Iraqi health authorities' management of the COVID-19 outbreak. The strict governmental actions to contain the pandemic, especially the lockdown, has badly affected the life of the population in general and dentists in particular. The rapidity of the eruption of the SARS-COV-2 infection, the lack of adequate information regard-

ing the transmission and treatment, and the shortage of personal protective equipment at the start have increased the stress on dentists affecting their job satisfaction¹⁸ and acceptance of the governmental strategies to combat the COVID-19 outbreak.¹⁵

On the other hand, 49.3% of dentists are satisfied with their institutions' management of COVID-19. The government took several measures to minimise the spread of infection to healthcare workers, including dentists, like asking patients to wear a facial mask, preventing those who are febrile from entering the dental clinics, and social distancing. However, dentists were satisfied with their institutional management rather than the governmental one. The dentistry centre is a small institution, and workers have a great chance to build good interpersonal relationships, especially in hard circumstances like the pandemic; they also participate in decision-making inside their institution more commonly than at the governmental level. These may explain why dentists are satisfied with their institution's management but not that of the government, though the institution should apply the same recommendation made by the national health authorities. This agrees with the study in Ethiopia, which states that job-related factors are significantly associated with health workers' job satisfaction, such as the nature of work, interpersonal relationships, organisational factors such as participation in decision-making, and developmental opportunities.¹⁹

Regarding dentists' satisfaction with WHO management of the COVID-19 outbreak, nearly half of them are not satisfied. The role of WHO in managing outbreaks includes several measures to help governments to face this illness.¹⁴ WHO's a relatively late response to the pandemic might be the cause of making some participants dissatisfied with its management.

The dissatisfaction of dentists with government management was significantly associated with age, considering that most participants were below the age of 30 years and were more prone to receive their knowledge from social media. Also, the health authority's recommen-

dations may not reach all healthcare workers. Khader et al. claimed that the national and international guidelines should be sent by the regional and national dental associations to all registered dentists during a crisis, including the COVID-19 pandemic, to ensure that dentists are well-informed and aware of the best practices and recommended disease management approaches.²⁰

Being women was significantly associated with satisfaction with their institution's management of COVID-19. The ministry of health gave authority to the institutions to decrease the hours of work in the governmental sector, impose wearing personal protective equipment (PPE), and social distancing; however, women had the extra benefit of staying at home if they were pregnant or having a child of fewer than five years.

The dentists' job description was significantly associated with the satisfaction of the institution management during COVID-19, while they are generally dissatisfied with the Iraqi government's management of COVID-19. This may be due to duties imposed on them regardless of their job description in fighting the pandemic helping their counterparts, the physicians, especially at the primary healthcare centres.²¹

Nearly half of our sample, 50.7%, were junior dentists with low experience. They found themselves fighting against the pandemic during the first wave. This state made them seriously concerned about the future of their career in practising dentistry in the governmental and private sectors. A study conducted in Turkey found that 85.8% of dentists were concerned about their professional future, especially among those working in the governmental sector.²² In addition, dentist preparedness and knowledge to face this urgent and highly infectious respiratory disease are expected to be low despite the availability of protective measures established by the Ministry of Health (MoH) to overcome COVID-19. In a multisite review conducted in 2020,²³ 65 % of the dentists who participated had a low comfort level with the preventive measures and available treatment during the COVID-19

pandemic.

We found a significant relationship between the participants' years of experience and their satisfaction with the national management of COVID-19. The anxiety triggered by the pandemic and the lockdown is higher in the younger age group²⁴ and decreases with increasing age.²² It increased the necessity to bring intended psychological care to younger age groups with less experience. This situation was not a priority for the health authorities amid the abrupt invasion of the pandemic. Dentists' mounting level of anxiety causes low satisfaction with the governmental management towards the outbreak.¹⁵

Dentists' positive nasal swab test results are significantly related to their dissatisfaction with Iraqi government management toward covid-19. Although the health authorities adopted a policy of quarantining patients who tested positive and granting them a compulsive sick leave, difficulties in getting the swab at a nearby place or drug treatment once needed may cause this dissatisfaction.

CONCLUSION

Dentists in the Al-Resafa health directorate are satisfied with their institution's management of the outbreak of SARS-CoV-2. This satisfaction is more among women and the younger age group. However, they are dissatisfied with the Iraqi government and WHO management of the COVID-19 crisis.

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Abbreviations list: Coronavirus disease 2019 (COVID-19), General practitioner (GP), Ministry of Health (MoH), Personal protective equipment (PPE), Severe acute respiratory syndrome- corona virus-2 (SARS-COV-2), Statistical Package for the Social Sciences (SPSS), United State of America (USA), Universal health coverage (UHC), World Health Organization (WHO), Year (Yr).

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