



Original Article

COVID-19 Vaccine Hesitancy among Iraqi Dentists

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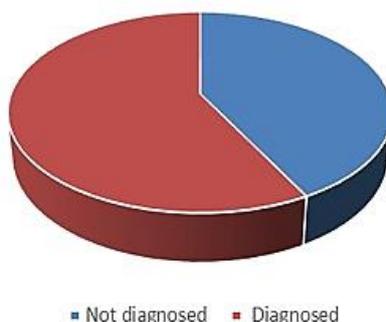
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ABSTRACT

Since it was first detected in Iraq in February 2020, the COVID-19 epidemic has spread significantly among healthcare professionals. Due to the nature of dental practices, oral health care professionals are more susceptible to infection. The COVID-19 vaccine was first administered to medically vulnerable people and healthcare personnel by the Iraqi ministry of health in March 2021. The current study sought to assess the grounds for accepting or rejecting the COVID-19 vaccine among Iraqi dentists. An anonymous google form questionnaire was distributed to dentists via e-mail and social media in October 2021. A total of 732 practicing dentists participated in the study. The questionnaire consisted of 3 sections (4 demographic questions, two behavioral questions about vaccination, and 11 questions regarding COVID-19). In general, 84.4% of respondents accept the COVID-19 vaccine and only 3.3% are against it. About 86.1% of respondents already took the COVID-19 vaccine. The participants' full justification for receiving the vaccination was safeguarding their family and friends (73%), whereas the top justification for refusing was lack of knowledge (37.4%). More efforts should be made to increase the awareness of Iraqi dentists toward the COVID-19 vaccine.

GRAPHICAL ABSTRACT

Partisipants diagnosis with COVID-19



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Introduction

In the fall of 2019, an unknown etiology of severe pneumonia affected people in Wuhan/ China and then spread worldwide with fever, cough and breathing difficulty, and a high mortality rate, which was considered a deadlier strain of SARS, then known as COVID-19 (stands coronavirus disease 2019) [1].

The WHO (World Health Organization) declared the illness a global pandemic in March 2020 [2], although there is no cure or widely accepted medication for it. As a result, prophylaxis is still the most effective method of combating this virus, and among those precautions was vaccination [3]. Oral health professionals, including dentists, are highly exposed to COVID-19 infection because of the close contact with the patient's face and the fact that the patient may not appear to be showing symptoms of the disease (especially since the majority of dental work is full of droplets from the patient's oral cavity) [4-6]. In order to provide a secure environment for both themselves and their patients, it has been observed that dentists should exercise caution [7]. Thus, dental professionals must receive their vaccinations at a young age [8]. The Ministry of Health in Iraq decided in February 2021 to start vaccinating against COVID-19 among health workers, including dentists [9].

Numerous people in many nations were reluctant (or unwilling) to receive the COVID-19 vaccine [10, 11].

Despite the availability of vaccination services, vaccine hesitancy (VH) is defined by the WHO as a "delay in acceptance or refusal of immunization" [12].

In this study, we looked at how Iraqi dentists felt about immunizations in general and the COVID-19 immunizations.

Materials and Methods

The Institutional Review Board (IRB) of the Al-Rafidain College University in Baghdad, Iraq, waived the requirement for ethical approval because the study was observational and respected the anonymity and confidentiality of participants. There was no sensitive or identifying information included in the data collection.

Around 10 minutes were allotted for completing the questionnaire.

An anonymous google form questionnaire was distributed to dentists via e-mail and social media in October 2021. A total of 732 practicing dentists participated in the study, mostly from Baghdad, the capital of Iraq. The questionnaire consisted of 3 sections (4 demographic questions, two behavioral questions about vaccination, and 11 questions regarding COVID-19).

The demographic questions include age, gender, academic achievement, and owning a private clinic. The behavioral questions ask about COVID-19 vaccination opinions and vaccination history after graduation. The questions about COVID-19 include whether the participant has previously been diagnosed with the disease, their opinion of whether the COVID-19 vaccine reduces the spread of the disease in the community, the severity of the symptoms, and whether the dentist recommends the vaccine to their family and friends, whether the participant has taken the vaccine or intends to take it, and the cause. Finally, the participant is asked whether they feel they have enough knowledge about the COVID-19 vaccine, and their preferred brand. The statistical analysis was conducted using the percentile approach after collecting the data.

Results and Discussion

The total number of respondents was 734 Iraqi dentists, most from Baghdad, the capital of Iraq, with the majority of females 85%, aged between 25-35 years 82.5%, and educational level of Bachelor in dental surgery BDS 80.9%. Most respondents don't do not have a private clinic, 78.3% (as shown in [Table 1](#)). 78% of the respondents had different types of vaccines after graduation (as shown in [Table 2](#)). In terms of COVID-19 infection, 57.7% of respondents had been diagnosed with the infection (as indicated in [Figure 1](#)), and 84.4% had received the vaccine (as shown in [Figure 2](#)). The majority of respondents believe that the vaccine reduces the spread of infection in the community 83.8% of the time (as shown in [Figure 3](#)), while only 5.6% do not.

Table 1: Demographic questions (N=734)

Characteristic		Frequency (N)	Percentage (%)
Sex	Male	107	14.58%
	Female	626	85.29%
Age groups (years)	25-35	606	82.56%
	36-45	90	12.26%
	46-55	31	4.22%
	56<	6	0.82%
Academic achievement	BDS	594	80.93%
	MSc	123	16.76%
	PhD	16	2.18%
No private clinic		575	78.34%
Private clinic		158	21.53%
No vaccine after graduation		161	21.93%
vaccine after graduation		573	78.07%

Table 2: Question regarding COVID-19 (N=734)

Characteristic	Frequency (N)	Percentage (%)
No vaccine after graduation	161	21.93%
vaccine after graduation	573	78.07%

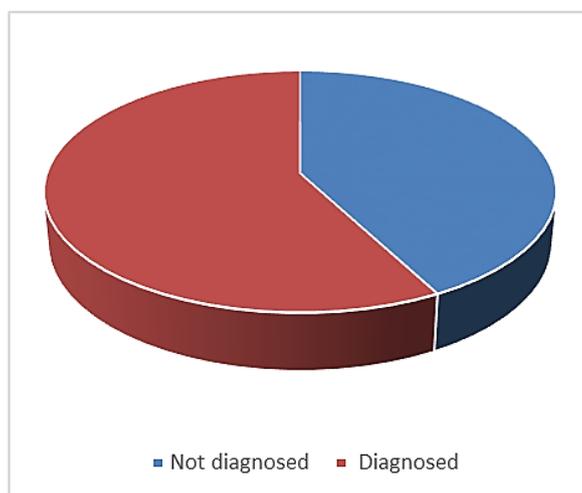


Figure 1: Partisipants diagnosis with COVID-19

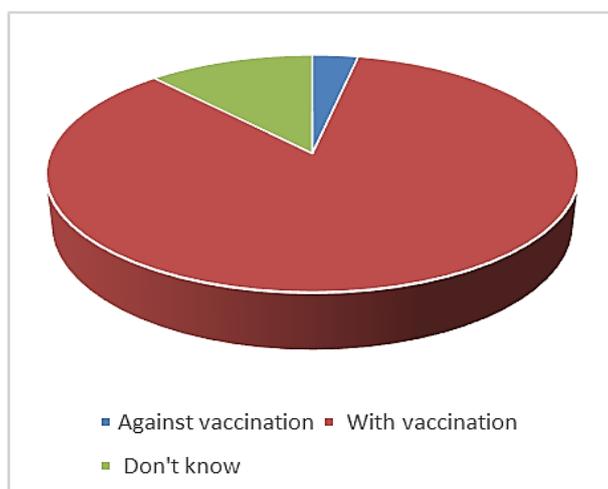


Figure 2: Openion about COVID-19 vaccine

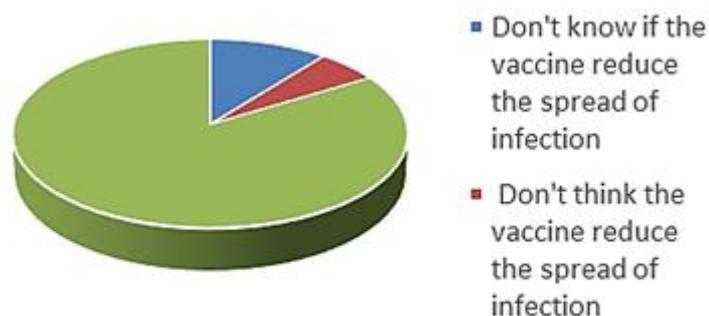


Figure 3: Opinion if the vaccine reduce the spread of infection

Additionally, the majority believe that the vaccine reduces the severity of the disease 92.3% of the time (as shown in Figure 4), while only 2.3% do not. Only 8.2% of the respondents' dentists advise against receiving the COVID-19 vaccine. In contrast, the majority (91.8%) do (as shown in Figure 5). Approximately 86% of people have received the vaccine (as indicated in Figure 6), and 22.66% of them state that they did so in order to safeguard their family and friends. 52% of them had several reasons for getting the vaccine, including safeguarding their family, friends, patients, and themselves, while 11.89% did so to protect themselves. 6.5% of those who received the vaccination did so in order to resume their regular activities (as shown in Figure 7).

Regarding the unvaccinated respondents, representing about 3.3%, the main reason not to take the COVID-19 vaccine was pregnancy (20.4%), and about 17.5% have multiple reasons varying between fear, pregnancy, and worry from the unknown effect of the future. About 15.5% of unvaccinated respondents worried about the unknown effects of the vaccine in the future, and about 13.6% of them claim that they do not have enough information about the vaccine, with no response from the other 13.6%. Only 0.97% of the unvaccinated respondents claimed that there are better ways than vaccines, others disagreed with vaccination, and 1.94% claimed that the vaccine was not tested rigorously (as shown in Table 3 and Figure 8).

Table 1: Question regarding COVID-19 (N=734)

Characteristic	Frequency (N)	Percentage (%)
Not diagnosed with COVID-19	310	42.23%
Diagnosed with COVID-19	424	57.77%
Against COVID-19 vaccine	24	3.27%
With COVID-19 vaccine	623	84.88%
Don't know	87	11.85%
Don't know to reduce the spread	78	10.63%
Don't think to reduce the spread	41	5.59%
Think to reduce the spread	614	83.79%
Don't know to reduce the severity	56	7.63%
Not reduce the severity	17	2.32%
Reduce the severity	678	92.37%
Not recommend the vaccine to his family and friends	60	8.17%
recommend the vaccine to his family and friends	674	91.83%
Didn't take the vaccine	103	14.03%
Took the vaccine	631	85.97%
Hesitated to take the vaccine	59	57.28%
Never take the vaccine	20	19.42%
Will take the vaccine	58	56.31%
reasons for intending to be vaccinated against COVID-19		
Took because mandatory	22	3.49%
Comply with MOH recommendations	7	1.11%
Not miss work	3	0.48%
To not wear masks anymore	4	0.63%

Protect family	143	22.66%
Protect myself	75	11.89%
To protect patients	1	0.16%
Multiple	329	52.19%
Return to normal activities	41	6.50%
reasons for Not intending to be vaccinated against COVID-19		
No response	7	1.11%
Not life threatening	1	0.97%
better ways rather than vaccine	1	0.97%
disagree	1	0.97%
fear	6	5.83%
unknown future effect	16	15.53%
Fear of immune disorder	3	2.91%

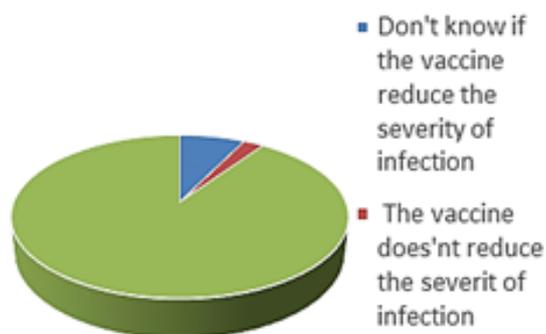


Figure 4: Openion if the vaccine reduse the severity of infection

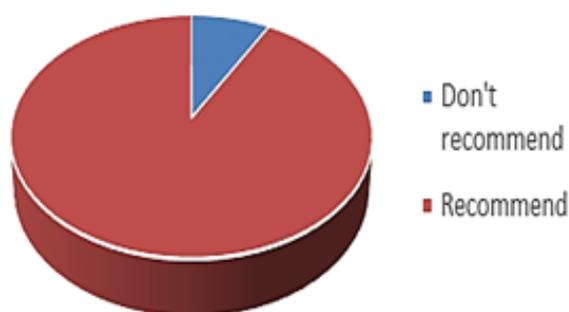


Figure 5: Vaccine recommendation

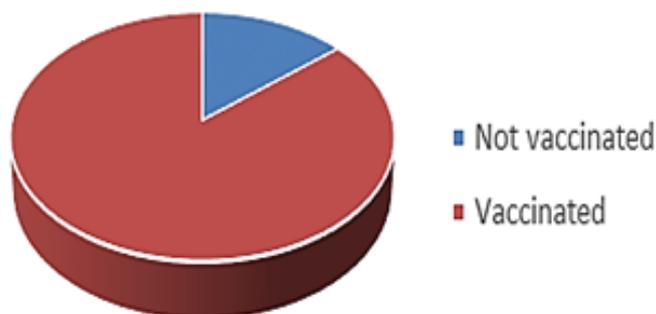


Figure 6: Vaccination status



Figure 7: Cause of taking vaccine

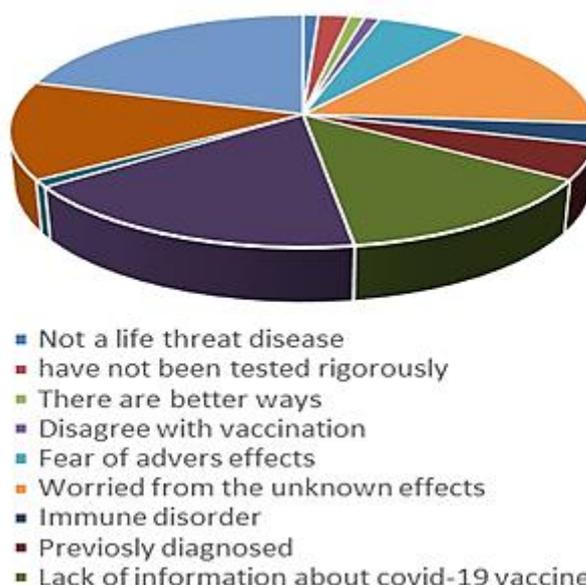


Figure 8: Cause of not and never take vaccine

Dentists are clinical professionals with a high risk of cross-infection, and vaccination is dentistry's most popular preventative measure (despite the hesitation that rumors and false information may bring on) [13-15].

Due to the Iraqi Ministry of Health's decision to begin immunizing health workers, including dentists, against COVID-19 in February 2021, our study sought to assess the intentions of Iraqi dentists to get the vaccine [9].

Our findings revealed an acceptance rate of 84.4%, which is comparable to those from earlier research on dental professionals (85%) [16], Lebanese practicing dentists (86%) [17], Italian dentists (82%) [18], and a study on healthcare

workers that found an acceptance rate of 82.5% for dentists [19].

The high percentage of acceptance in our findings may be explained by the fact that COVID-19 vaccinations were already accessible in Iraq at the time of our investigation. Additionally, the fact that more than 22221 people had died from COVID-19 in Iraq at the time of the survey [20], many of them doctors and dentists, may have an impact on the level of anxiety, which in turn has positively impacted the acceptance rate. Other reasons impacting the high incidence of COVID-19 vaccination adoption may include the severe economic and financial difficulties aggravated by the repeated total lockdowns in Iraq (making

people willing to resume routine professional activity). The driving forces behind dentists' acceptance of the COVID-19 vaccine and the obstacles in its way are consistent with the results of other investigations [21-26].

It is believed that the lack of knowledge about new vaccinations, potential side effects, and overall vaccination safety were the main explanations for those individuals who demonstrated vaccine hesitation (against the vaccine or unsure of whether they were with or against the vaccine) [28-37].

It is preferable to dispel rumors, disseminate accurate information, and increase public awareness of the critical need for mass immunization [28]. In reality, encouraging HCWs and the general community to immunized is the only way to resume "normal activities" quickly [18].

The primary drawback of this study is that all of its subjects were chosen from Baghdad, the nation's capital. Therefore, the results might not be typical of other dental professionals in Iraq. Despite these drawbacks, this study is the first to examine the opinions of dentists in Iraq regarding the COVID-19 vaccine.

Conclusion

In this study, although most Iraqi dentists, especially in the capital Baghdad, accept the COVID-19 vaccine, a percentage still does not accept it. Since they must make recommendations to patients and encourage adherence to immunization programs, it is essential to raise the acceptance rate among Iraqi dentists. In order to raise the acceptance rate, the information on the COVID-19 vaccination must be updated and improved.

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Authors' contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

There are no conflicts of interest in this study.

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