

Acceptance of COVID19 Vaccines among Health Care Workers in Al Risafa Directorate of Health in Baghdad

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ABSTRACT:

BACKGROUND:

Coronavirus disease 19 containment measures are reaching a new turn with the introduction of several new vaccines. It is obvious that new vaccine acceptance will play an important role in the control efforts and not only the vaccine effectiveness and safety which are the main objective of this study.

AIM OF THE STUDY:

To figure out the level of acceptance of COVID19 vaccines among health care workers in Al Risafa Directorate of Health.

PATIENTS AND METHODS:

This is an online cross-sectional self-filled survey conducted in a 10 days period with the enrollment of 2423 participants from the largest directorate of health in Iraq that is Al Risafa directorate of health, the sample included all job titles and has been conducted prior to the administration of COVID 19 vaccines in Iraq.

RESULTS:

The majority of participants were PHC based, dentists more than others, most of them are nonsmokers and 44% had history of previous infection. The highest percentage 57% rejected the idea of having the vaccine, due to safety concerns and lack of conviction while 76.8% of total participants preferred to postpone the vaccination. History of vaccination with influenza vaccine was associated with better acceptance rate.

CONCLUSION:

The acceptance level of all new COVID 19 vaccines is disappointingly low among health care workers which would affect disease transmission control plans. Participants with previous good attitude for having vaccines such as flu vaccine showed better acceptance rates. Safety concerns, myths about vaccines and lack of trust lead to (hard to vaccinate) vaccine coverage problem.

KEYWORDS: Vaccines, COVID19, Acceptance.

INTRODUCTION:

The COVID-19 disease is expected to continue imposing further pressure on health systems worldwide by imposing high morbidity and mortality rates, so it is of paramount importance and number one priority to establish a well-planned global vaccination campaign as early as possible¹. It is not merely the availability, effectiveness and safety of new vaccines required to combat the COVID-19 pandemic, it is also the acceptance and willingness to take the vaccine playing pivotal roles in deciding the fate of this pandemic². Governments and public health authorities need to work and be prepared to address vaccine hesitancy

and illiteracy even before the availability of new vaccines; moreover, clinicians and public health professionals need to anticipate, validate, and be prepared to address people's questions and concerns³. Several coronavirus diseases 19 vaccines are currently in use in several countries and reducing the global morbidity and mortality of COVID-19 will depend on the distribution and acceptance of COVID-19 vaccination⁴. This acceptance of the COVID-19 vaccine will play a major role in combating the pandemic. Healthcare workers (HCWs) are among the first group to receive vaccination, so it is important to consider their attitudes about COVID-19 vaccination to better address barriers to widespread vaccination acceptance⁵. This study was conducted aiming to define the extent of acceptance of COVID-19 vaccine among a very

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important and leading social group, the healthcare workers. It is expected to have some of them in Iraq shortly. Therefore, this study was conducted before the start of the vaccination campaign in Iraq aiming to define the extent of acceptance of COVID-19 vaccine and factors influencing it.

AIM OF THE STUDY:

To discover the acceptance rate of different COVID19 vaccines in a sample of healthcare workers in (Al Risafa Directorate of Health in Baghdad).

PATIENTS AND METHODS:

This is a cross-sectional survey conducted in Baghdad/ Iraq targeting the health care workers working in the largest directorate of health in the country (Al-Risafa Directorate of Health in Baghdad has around 24000 health care workers). Data collected using an online questionnaire guided by previous studies^(5,6,7) and then analyzed using SPSS version 23. The study was just conducted before the start of COVID-19 vaccination campaign in Iraq in late January and early February. The population targeted in this study is health workers in Al-Risafa health directorate being a target risk group for contracting COVID infection and a priority target group for the new vaccine; individuals from outside the facilities of the directorate of health are not included in this study.

This study is aiming to assess the acceptance to vaccinate against COVID-19 vaccine among the health workers of Al-Risafa directorate of health only; so, the link to the online survey was only shared with the directorate personnel through their managers.

Data were collected through online survey in a 10 days period from 26/1/2021 to 6/2/2021. There is an urgent need to figure out the acceptance of COVID-19 vaccine before starting the vaccination campaign in Iraq. A questionnaire was constructed for the purpose, based on previous studies^(5,6,7) including reasons for not to vaccinate to explore factors influencing people's behavior towards the new vaccine. Participation in the survey was voluntary, privacy was secured through excluding names and age of participants, and a single entry was permitted to prevent duplication of responses.

RESULTS:

A total number of 2423 respondents were enrolled (about 10% of the total number of health workers in Al- Risafa Directorate of Health) in this study;

a number of characteristics and variables of the sample were included and collected.

Figure 1 shows the gender distribution among participants, with females comprise 1343 (55.4%) and males 1080 (44.6%).

According to health facility type, the primary health care centers had the highest percentage among participants with 821 respondents (33.9%), while the rehabilitation centers had the least number of participants with only 32 (1.3%) of total table 1.

In regard to occupation, participated dentists comprised the highest number 710 (29.3%) followed by doctors 335 (13.8%), while there were only 2 service workers (0.1%) among respondents table 2.

Among 2423 participants, 438 (18.1%) were chronic diseases patients while 1985 (81.9%) were free from chronic illnesses, hypertension represented the chronic disease that was most prevalent among chronic diseases sufferers 198 (40.6%) table 3.

In regard to previous infection with COVID-19, there were 1081 (44.6%) with previous history of infection, among them, 70 % were diagnosed by PCR throat swab. Table 4.

For acceptance of COVID-19 vaccine, the largest percentage (57.1%) of participants was reluctant to vaccinate at the current time figure 4.

Concerns about vaccine safety was the single most prevalent cause for vaccine rejection followed by lack of conviction, while the majority (33.5%) of rejecters attributed their rejection to all causes mentioned table 5.

When asked if the origin of vaccine manufacturer would affect vaccine acceptance, 338 (41.2%) out of 820 responses for this question preferred the British vaccine while the least percentage was for the Chinese vaccine 81 (9.9%) figure 5.

More than 51% percent of participant had previous history of influenza vaccination while less than 48.5 % had history of not receiving the influenza vaccine figure 6.

In the analytic section, the presence of chronic illnesses history does not seem to affect the acceptance of COVID-19 vaccination by using chi square analysis (table 6) with p value =0.33 which is more than 0.05 level of significance used in this study.

ACCEPTANCE OF COVID19 VACCINES AMONG HEALTH CARE WORKERS

In regards to previous infection with COVID-19, the analysis also showed no significant relation with p value equals 0.4 (table 7) which is higher than 0.05 level of significance.

The history of previous influenza vaccine has also statistically significant link with acceptance of

COVID-19 vaccine (table 8) with p value 0.000 less than 0.05 level of significance.

The occupation of participants had statistically significant effect with p value =0.000 (table 9).

The facility setting showed significant relation to accepting the vaccine with p value 0.000 (table 10).

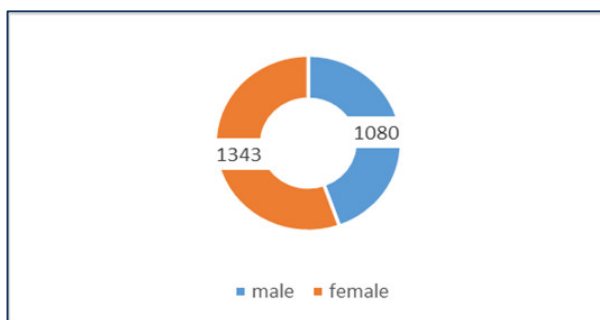


Figure 1: Gender distribution among participants.

Table 1: Participants according to facility type.

Facility type	Number and % of participants	Percentage %
Directorate of health	206 (8.5%)	8.5
General hospitals	282 (11.6%)	11.6
Tertiary hospitals	288 (11.9%)	11.9
Health districts	184 (7.6%)	7.6
Specialized dental centers	536 (22.1%)	22.1
PHC centers	821 (33.9%)	33.9
Rehabilitation centers	32 (1.3%)	1.3
Isolation centers	74 (3.1%)	3.1
Total	2423	100%

Table 2: Distribution of respondents according to occupation.

Occupation	Number	Percentage %
Doctors	335	13.82
Dentists	710	29.30
Pharmacists	243	10.02
Nurses	142	5.86
Paramedics	248	10.23
Administrative staff	174	7.18
Technical staff	45	1.85
Service workers	2	0.08
Engineers	48	1.98
Lab personnel	275	11.34
Others	201	8.29
Total	2423	100%

ACCEPTANCE OF COVID19 VACCINES AMONG HEALTH CARE WORKERS

Table 3: Distribution according to the presence of chronic illnesses.

Presence of chronic illness	Frequency	Percent
No	1985	81.9
Yes	438	18.1
Total	2423	100.0

Table 4: Status of previous COVID-19 infection among participants.

Previous infection	Frequency	Percent
No	1342	55.4
Yes	1081	44.6
Total	2423	100.0

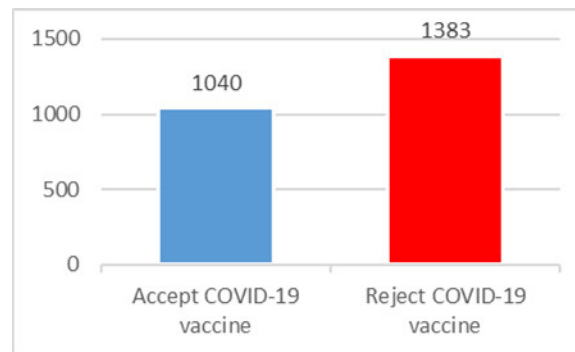


Figure 4: Acceptance of COVID 19 vaccine.

Table 5: Causes of vaccine rejection among participants.

Causes of rejection	Frequency	Percentage
Not convinced	219	15.7
Unsafe vaccine	395	28.3
Transport and storage	116	8.3
Vaccine origin	20	1.4
Vaccine not effective	65	4.7
No need for vaccine	71	5.1
All of the above	468	33.5
others	41	2.9
Total	1395	100%

ACCEPTANCE OF COVID19 VACCINES AMONG HEALTH CARE WORKERS

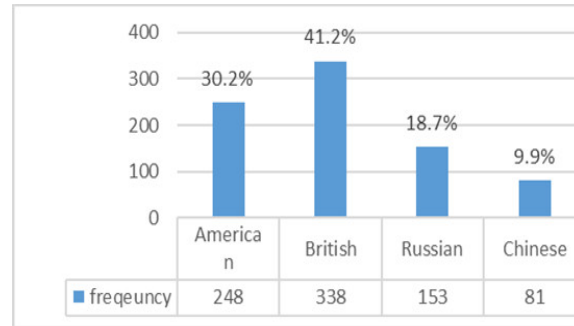


Figure 5: Vaccine acceptance according to origin.

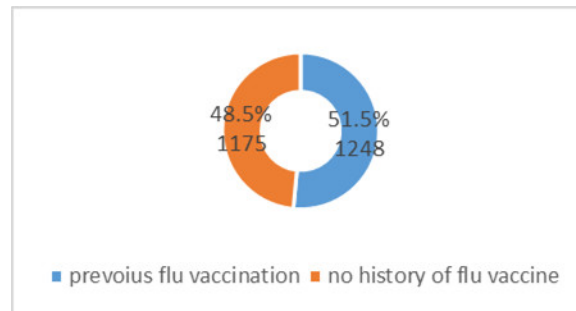


Figure 6: History of influenza vaccination among participants.

Table 6: Chi square analysis of effect of chronic illnesses history on acceptance of COVID-19 vaccine.

Chronic disease	Vaccine acceptance		total	Asymptotic significance (2sided)
	No	yes		
No	1124	861	1985	Pearson Chi square =0.33 (not significant)
Yes	259	179	438	
Total	1383	1040	2423	

Table 7: Chi square analysis of effect of previous COVID-19 infection on vaccine acceptance.

Previous infection with COVID19	accept vaccine		Total	Asymptotic significance (2 sided)
	No	yes		
Yes	776	566	1342	Pearson chi square = 0.4 (not significant)
No	607	474	1081	
Total	1383	1040	2423	

ACCEPTANCE OF COVID19 VACCINES AMONG HEALTH CARE WORKERS

Table 8: Relation of influenza vaccination with COVID-19 vaccine acceptance.

Ever vaccinated with influenza vaccine	Acceptance of COVID-19 vaccine		Total	Asymptotic significance (2 sided)
	no	yes		
no	735	440	1175	Pearson chi square=0.000 (significant)
yes	648	600	1248	
Total	1383	1040	2423	

Table 9: Acceptance in relation to occupation.

Occupation	Acceptance of COVID-19 vaccine		Total	Asymptotic significance (2 sided)
	No	yes		
Doctor	107	228	335	Pearson chi square=0.000 (significant)
Dentist	393	317	710	
Pharmacist	142	101	243	
Nurse	78	64	142	
Paramedic	170	78	248	
Administrative staff	104	70	174	
Technical staff	32	13	45	
Service workers	1	1	2	
Engineering staff	35	13	48	
Lab workers	183	92	275	
Others	138	63	201	
Total	1383	1040	2423	

Table 10: Acceptance in relation to type of health facility.

Type of health facility	Acceptance of COVID-19 vaccine		Total	Asymptotic significance (2 sided)
	No	Yes		
Health directorate	121	86	207	Pearson chi square=0.000 (significant)
General hospital	123	159	282	
Specialized hospital	155	132	287	
Health sector	102	82	184	
Dental center	316	220	536	
PHC center	500	321	821	
Rehabilitation center	21	11	32	
Isolation center	45	29	74	
Total	1383	1040	2423	

DISCUSSION:

The results of this study are coming up with some important tips that could be noticed by health authorities in the pre and early stages of introducing COVID 19 vaccine into health system processes.

A total 2423 participants rolled out in this study, a slight majority of them were female (55.4%),

this coincides with many similar studies in different parts of the world^(6,7,8)

In regard to facility type, PHC centers showed the highest number of participants while rehabilitation centers were the least, understood to be consistent with the facilities number affecting health workers share of participation. As direct service providers, dentists and doctors were

the main participants in this study followed by lab personnel and pharmacists, which is similar to study in the United States⁽⁵⁾. Moreover, another explanation could be simply the use of technologies and utilization of online surveys are more habitual for doctors and dentists occupations than for others.

When it comes to acceptance, only 43% of participants in the health sector accepted the idea of having the vaccine in comparison with 57% refusal, this is comparatively similar to the percentage in the United States (3) but different from population based studies^(9,10,11).

New vaccine safety concern was the single most dominant cause for rejecting the vaccine which shows similarities with results found in Russia and Italy but not in Egypt, Australia, Norway, Saudi Arabia, Turkey and others which, in general, had good acceptance rate for the vaccine prior to its actual enrollment.⁽¹²⁾

The second most prevalent cause is lack of conviction, which is consistent with the general global hesitancy mood towards COVID 19 vaccines in the shadow of the brief clinical trial time.⁽¹⁾

Previous infection did not show statistical significance which goes with Saudi study⁽¹³⁾. This could be originated from the incorrect belief that previous infection with COVID 19 can initiate long lasting protection against the disease making the vaccine unnecessary.

For the origin of the vaccine, the British AstraZeneca was the most preferred vaccines when the question directed to all participant prior to starting the vaccination campaign in Iraq, but for those who accept vaccination among all participants would rather taking American origin vaccines rather than other vaccines which was statistically significant. Later when the side effects of thrombotic events discovered in some counties in Europe and America, the mood of the people towards the above mentioned vaccine changed, the results is similar to a previous study on the general population in Iraq at the end of 2020.⁽¹⁴⁾ Concerning the preference to postpone the vaccination observed in 76.8 % of the sample was just consistent with similar study in Canada targeting health care workers with 74% of them were willing to postpone vaccination⁽¹⁵⁾ as doubts and uncertainty seems to play an observable role in deciding acceptance behavior.

The private sector was not being sought as a credible source of vaccine distribution as only 21.7% were willing to receive the vaccine from the private sector, this could have been attributed to the exclusive provision of all vaccines in Iraq for many years in contrast to the private sector which probably lacks the needed experience in managing vaccine supply and may be the unwillingness of population to pay for vaccination as they are all free in the public sector.

When it comes to history of vaccination with flu vaccine, the statistical analysis showed a significant difference between the group of participants who received the vaccine with those who did not, with the received group was more ready to accept the new vaccine. This goes with similar study conducted in the USA⁵ and may refer to a better attitude towards vaccination among the flu vaccinated individuals, while chronic illnesses did not show any association of significant value which is incompatible with the American study and could be attributed to the general trend in rejecting the new vaccine in Iraq.

In reference to occupation, the study showed clear preference for direct medical and patient care providers such as doctors, dentists, pharmacists, nurses and paramedics for the acceptance of the vaccine over non-medical staff. This is also found in previous studies in the USA^(5,16)

In regard to type of health facility, the difference was significant that denotes the effect of service provision process on acceptance of the vaccine and consolidates the results of type of occupation.

CONCLUSIONS AND RECOMMENDATIONS:

1. The acceptance rate among health care providers is disappointedly low, and this would increase the difficulty and complicate the efforts of vaccine distribution and consequently the disease control efforts.
2. The attitude towards vaccines in general is affecting the acceptance rate which is evidenced through the higher rate of acceptance among previous flu vaccine receivers.
3. Lack of trust is still overwhelming all vaccination plans anywhere on the globe. This is a universal problem evidenced in multiple studies all over the world and in this specific one through the intent to postpone or reject the vaccination process.

4. Hard to vaccinate is unique for new vaccines, as evidenced in this study, unlike old ones that is usually accompanied with hard to reach.
 5. Intensified health education campaigns that use all public figures is a critical factor in persuading more people accepting COVID-19 vaccines. This should include, among others, political, religious, art and other public figures.
 6. Regulations that mandate vaccination certificate or regular PCR testing for people in public places (airports, stadiums, malls, public service buildings and others).
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