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Assessment The Acceptability Of A COVID-19 Vaccine Among Healthcare Workers In The Kingdom Of Saudi Arabia 2022

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Abstract:

Background

In late 2019, a new coronavirus, severe acute respiratory syndrome coronavirus (SARS-CoV-2), was discovered as the source of an outbreak of acute respiratory illness in Wuhan city, China. The World Health Organization announced a public health emergency and described the virus and its associated disease, coronavirus disease 2019 (COVID-19), as a pandemic in March 2020. In Saudi Arabia, the government applied precautionary actions to decrease and limit the spread of the virus by suspending schools, closing offices, and enforcing lockdown which lasted for approximately three months (March 25th, 2020 to June 21st, 2020). Additionally, promotion of social distancing practices and other preventative measures were continued and re-emphasized after the lockdown ended. COVID-19 vaccines were made available to the public by the end of 2020 However, little is known about COVID-19 booster dose (CBD)vaccine perception among healthcare workers (HCW) worldwide. However, a safe vaccination program with broad clinical benefits is considered a suitable long-term solution when implemented globally. ***Aim of the study****: To assess acceptability of a COVID-19 Vaccine among Healthcare Workers in the Kingdom of Saudi Arabia 2022.* ***Method:*** *Cross sectional study, was conducted among Saudi Arabia health care workers in primary health care centers in Makkah. Data were gathered through the use of a self-administered questionnaire. A convenience sampling technique was utilized to collect the data. has been send to the study participants through social media platforms and email. [1]Our total participants were(200).****Results:*** *most of the participants (30.0%) were in the age group 40-50 years, majority of them were female (85.0%) the marital stats most of participants married were(70.0%), number of children the majority more than 2 were(57.05%) level of education the majority of participant are Bachelor's degree were(51.0%), pprimary Role at Work most of participants Nurses were(45.0%), residence the majority of participant are Urban were(68.0%) .****Conclusion:*** *There is a good acceptability of a COVID-19 Vaccine and some hesitancy in receiving the dose among HCWs in both countries. The introduction of personalized education, risk communication, and deliberate policy could help to reduce the number of people who are unacceptable to take a COVID-19 Vaccine, this important population with health care workers playing an important role to build vaccine confidence and trust among employees.*

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Keywords: Assessment, acceptability, COVID-19, Vaccine, HCW, Makkah, Saudi Arabia

Introduction

The world is witnessing a major global humanitarian disaster due to the spread of the Coronavirus disease 2019 (COVID- 19), which has affected all aspects of life across the planet. Countries around the world have implemented strict precautions and controls to contain the outbreak of COVID-19, which, among others, include social distancing and mandatory use of face coverings [1,2]. During the COVID-19 pandemic, it was shown that patients with T2DM were at increased risk of in hospital mortality due to COVID-19 compared to patients without diabetes [3]. Moreover, the COVID-19 mortality risk was shown to be independently associated with poor glycemic control and elevated body mass index (BMI) in those with T2DM among other risk factors [4]. Telemedicine is the technology utilized to enhance patient outcomes by improving accessibility to healthcare and medical knowledge [5]. COVID-19 vaccines are finally becoming available and many countries, including the Kingdom of Saudi Arabia (KSA), are already reserving supplies of the long-awaited vaccine. Following the Saudi Food and Drug Authority approval of the Pfizer- BioNTech COVID-19 vaccine, the country is set to introduce a phased vaccine rollout. Healthcare workers, the elderly, and patients with chronic and autoimmune diseases are scheduled to be early recipients of the vaccine[6]. However, the success of any vaccination programme depends on high vaccine acceptance and uptake, and the main challenge that now lies ahead is building public confidence in an emergency-released vaccine. Without such confidence, vaccine hesitancy is immanent[7]. Vaccine hesitancy is defined as "the delay in acceptance or refusal of vaccination despite the availability of vaccination services," and it is a global concern and a crucial factor in under-vaccination[8] Vaccine hesitancy presents a barrier to immunization program success and, in fact, has been identified by the World Health Organization (WHO) as one of the top 10 global health threats in 2019[9]. Despite the global effort to bring an end to the pandemic, anti-vaccination sentiments that spread misinformation on the dangers and consequences of vaccination cause hesitancy in immunization against preventable infectious diseases [10]
This study lands at a critical time for the Saudi health authorities as it is during the COVID-19 pandemic, The results of this study are expected to provide insight into projected vaccine uptake and underlying drivers of vaccine-related decision making among healthcare workers. By understanding this, effective strategies can be developed to enhance COVID-19 vaccine uptake in the KSA, as well as in other countries in the Arabian Gulf.[11] This study contributes to the limited literature on the demand (acceptability) of the novel COVID-19 vaccine in several ways.[12] First, it assesses the demand for the vaccine across the healthcare workers who are not only at an increased risk of contracting and transmitting COVID-19 but whose acceptance of the vaccine is significant in preventing the transmission of the virus between medical personnel and patients.[13] Second, this study represents one of the first findings on this matter in the KSA which is among the few countries that was able to successfully maintain a handle on the virus. Vaccination or immunization programs are beneficial only when there is a higher rate of perseverance and acceptance by the target population.[14] Evidence has suggested that a substantial proportion of fully vaccinated members of the general public are hesitant to get a COVID-19 vaccination booster dose HCWs, being a defined high-risk category for COVID-19 infection, were prioritized in all nations that rolled out the COVID-19 dosage vaccination [15].

Literature review:

The acceptability of HCWs concerning CBD vaccination significantly impact the public's attitude towards it. There are 5.76 million HCWs in India and 1.12 million HCWs in Saudi Arabia [16]

According to a review, the proportion of HCWs who were hesitant to take the COVID-19 vaccination ranged from 4.3% to 72% [17]

A cross-national study regarding vaccination hesitancy and preferences between the United States (U.S.) and China has revealed that both nations had high acceptability of vaccination, despite the vaccination policies [18]

Only 23% of healthcare workers were willing to receive vaccination in a Taiwanese study during the COVID-19 pandemic [19]. In a similar survey carried out in Egypt, 51% were undecided regarding whether to be vaccinated [20]

The survey was done to determine the willingness of HCWs in Saudi Arabia to get the COVID-19 vaccination. The survey included HCWs from all administrative regions of the country. Of the 1124 HCWs that participated in the survey, 674 responded and 35.1% expressed a reluctance to receive the vaccination [21]

Study in India and Saudi Arabia—have a high vaccine acceptability level, significant differences were observed. This may be due to the differences in the COVID-19 prevalence, the availability of COVID-19 vaccines, and vaccine policies [22]

Study of healthcare workers in two Indian hospitals assessed attitudes and willingness to accept the COVID-19 vaccination. Among the 520 participants who responded to the survey, 63% indicated they were willing to be vaccinated, while 46% of dental and 49% of medical HCWs exhibited vaccine reluctance [23]. A similar study was conducted on HCWs working in a tertiary care center in India; 54% of those surveyed were unaware of the determinants of the COVID vaccine, 20% exhibited reluctance, and 18% indicated strong opposition to the vaccine [24]

The survey that in India, apprehension that the vaccination would not be successful was the top reason for the reluctance to receive it (32%), whereas Saudi Arabian HCWs stated a lack of sufficient knowledge regarding the vaccine (30%). According to the CDC, responses following a COVID-19 vaccination have been comparable to those reported after administering two or more vaccination doses. The majority of adverse effects were mild to moderate in intensity. Although serious side effects are uncommon, they can occur [25].

Wibawa (2021) Vaccines are the main public health measure and best methodology to shield the among health care workers from COVID-19, since SARS-CoV-2 is profoundly infectious infection and influences populaces broadly and universally. The opposition for COVID-19 antibody creation and advancement against the spread and cataclysmic impacts of the sickness is continuous [26].

Rationale

Low the information regarding COVID-19 vaccine hesitancy and the potential variables influencing it increasing the vaccination against COVID-19 rates continues to be a challenge for Saudi Arabia. Despite the high infected by COVID-19 rate, there are still many vaccination among health care workers who opt not to get vaccinated and be protected, there are still several factors and reasons have come into play for people who do not get the vaccinate about COVID-19.Concerns about vaccine safety, vaccine efficacy, and lack of trust were possible underlying causes of vaccine hesitancy. HCWs are positively influenced by close friends and co-workers who value COVID-19 vaccination, which may encourage the development of cross-departmental interactions to increase vaccination rates. The presented observations and conclusions may serve as tools for building future policies and public health actions designed to increase the COVID-19 vaccination rate.

Aim of the Study

To assess acceptability of a COVID-19 Vaccine among Healthcare Workers in the Kingdom of Saudi Arabia 2022 **.**

Objectives:

To assess acceptability of a COVID-19 Vaccine among Healthcare Workers in the Kingdom of Saudi Arabia 2022 **.**

Subjects and methods

Study design:

This cross-sectional survey has been conducted among people in the city of Makkah Al-Mukarramah. The study carried for 60 days, from the September 2022 to October among health care workers Saudi worker to the PHC centers in Makkah, participants aged between <25 to 60 years old, the study investigators will share the survey and through emails to their primary contacts

Study setting / study area:

A study participant has been recruited on Makkah Al-mukarramh including PHC centers under supervision of directorate of Health Affairs of Makkah in Saudi Arabia. The study has been carried out in the city of Makkah, Makkah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. The most important cities in Saudi Arabia . It is the holy city for all Muslims, and is located in the western region. It is located in the western area in Kingdom of Saudi Arabia .Contains a population around 2.578 million.

Study population:

The study has been conducted among health care workers in the PHC centers in the Makkah Al-Mokarramah at Saudi Arabia. Including Al-Ka'akya, Al-Adl, Al-Zahir primary healthcare centers.

Selection criteria:

Inclusion Criteria:

- All Saudi health care workers who are more than <25 years of age. A study participant has been recruited from Makkah Al-Mukarramah and they got vaccinated.

Exclusion criteria:

- Saudi health care workers younger than <25 years
- Participants who did not consent to participate in the study, and/or did not answer the questions of the study.
- Health care workers with language barriers .

Study Sample:

The sample size has been calculated by applying Raosoft sample size calculator based on (The margin of error: 5%, Confidence level: 95%, and the response distribution was considered to be 20%) accordingly the Sample size is(200) of health care workers Saudi Population worker in PHC and adding 10 more to decrease margin of error. After adding 5% oversampling, the minimum calculated sample has been (200)**.** Computer generated simple random sampling technique was used to select the study participants.

Sampling technique:

Systematic random sampling technique is adopted. By using systematic sampling random as dividing the total population by the required sample size; (200)

Data collection methods:

The self-administered questionnaire is designed based on previous studies and frameworks to assess of Covid-19 infection and vaccination among health care workers COVID-19 .

The questionnaire was developed in English and was then translated into Arabic. The questions were first pre-tested and were revised and finalized after it was pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. The survey is estimated to take 10 min to complete .

To collect the information, a set of questions were constructed and developed .
The questionnaire consisted of two main sections; the first section focuses on
Socio demographic and background information such as age, education level, outcome and gender of the participants .
The acceptability of a COVID-19 infection and vaccination among health care workers .

A Pilot study
Was carried out at the questions were first pre-tested and were revised and finalized after it was pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. This study has been conducted and all suggestions taken into consideration

Data analysis
The Statistical Package for Social Sciences (SPSS) software version 24.0 has been used for data entry and analysis. Descriptive statistics (e.g., number, percentage) and analytic statistics using test for the association and the difference between two categorical variables were applied. A p-value ≤ 0.05 has been considered statistically significant.

Ethical consideration :
- Permission from family medicine program was obtained .
- Permission from the regional Research and Ethical Committee was be given to conduct our study.
- All the subjects has been participate voluntarily in the study .
- Privacy of information and confidentiality has been maintained .
- Full explanation about the study and its purpose was carried out to obtain their participation.

Budget: Self-funded

Results :

Table 1 distribution of demographic characteristics of the research. (n=135)

Table 1 distribution of demographic characteristics of the research.(n=200)

	N	**%**
Age		
<25	30	15
25-30	44	22
30-40	32	16
40-50	60	30
50-60.	34	17
Gender		
Female	170	85
Male	30	15
Marital status		
Single	44	22
Married.	140	70
Divorced.	6	3
Widower	10	5

Number of children		
Non	19	12.18
1	17	10.90
2	31	19.87
more than 2	89	57.05
level of education		
Primary/ Intermediate	20	10
Secondary school	38	19
Associates degree	40	20
Bachelor's degree	102	51
Primary Role at Work		
Physician	46	23
Nurses	90	45
Administrative/clerical staff	30	15
Social worker	34	17
Location of Work		
Ambulatory care	16	8
Emergency Department	12	6
Medical and Surgical Inpatient Units	38	19
Other	134	67
Residence		
Rural	64	32
Urban	136	68

Table 1 shows that most of the participants (30.0%) were in the age group 40-50 years old years, the majority of them were female (85.0%) while male(15.0%), also regarding the marital stats most of participants married were(70.0%)while single were(22.0%), regarding Number of children the majority of participant more than 2 were(57.05%) regarding level of education the majority of participant are Bachelor's degree were(51.0%), regarding the Primary Role at Work most of participants Nurses were(45.0%), regarding Location of Work the majority of participant are Other were(67.0%), also regarding Residence the majority of participant are Urban were(68.0%) .

Table 2: Distribution of acceptability of Covid-19 infection and vaccination among health care workers in the study

	No		**Yes**		**Chi-square**	
	N	**%**	**N**	**%**	**X^2**	**P-value**
Acceptability Covid-19 infection and vaccination among health care workers and booster without any hesitation.						
1. Have you received all the necessary vaccines in your lifetime?	12	6	188	94	154.880	0.000
2. Do you know about the COVID-19 vaccine	14	7	186	93	147.920	0.000
3. Have you received two doses of COVID-19 vaccines	4	**2**	196	98	184.320	0.000
4. Are you willing to take the COVID-19 booster vaccine or take it without any hesitation	26	13	174	87	109.520	0.000

Acceptability about take the vaccine COVID-19 and booster dose among healthcare workers.						
5. Do you believe that the COVID-19 vaccine is safe	40	20	160	80	72.000	0.000
6. Do you think that COVID-19 vaccination has adverse reactions	62	31	138	69	28.880	0.000
7. Do you encourage your family/friends/relatives to get the COVID-19 vaccine	30	15	170	85	98.000	0.000
8. Do you believe the COVID-19 vaccine and booster dose can reduce the spread of COVID-19	22	11	178	89	121.680	0.000
9. Do you believe the COVID-19 vaccine and booster dose can reduce the complications associated with COVID-19	26	13	174	87	109.520	0.000
10. Do you think that if everyone in society maintains the preventive	20	10	180	90	128.000	0.000
11. measures, the COVID-19 pandemic can be eradicated without vaccination	102	51	98	49	0.080	0.777
12. Do you think Pharmaceutical companies have developed safe and effective COVID-19 vaccines	46	23	154	77	58.320	0.000
13. Have you received COVID- 19 vaccines and booster dose because it is mandatory	36	18	164	82	81.920	0.000
14. Do you think Mix-Matching the booster dose is safe and effective	44	22	156	78	62.720	0.000
15. Do you believe that only high-risk individuals such as health care workers and elderly persons with other diseases only need COVID- 19 vaccines	108	54	92	46	1.280	0.258
16. Do you believe that only high-risk individuals such as health care workers and elderly persons with other diseases no need to COVID- 19 vaccines booster dose	138	69	62	31	28.880	0.000
17. Have you recently avoided cultural behaviors, such as shaking hands after vaccinated Against COVID-19	60	30	140	70	32.000	0.000
18. Have You're still practicing social distancing after vaccinated Against COVID-19	50	25	150	75	50.000	0.000
19. Compliance with the Ministry of Health precautions will prevent signs and Symptoms of the Vaccinate COVID-19	20	10	180	90	128.000	0.000
20. The appearance of signs and symptoms of vaccination COVID-19 is rapid and severe, so I do not recommend taking the vaccine COVID-19	130	65	70	35	18.000	0.000

The results shown in table (2) represent the Acceptability Covid-19 infection and vaccination among health care workers and booster without any hesitation. The results showed that regarding do you received all the necessary vaccines in your lifetime the

majority of Participant answer Yes were (94.0%) and a significantly relation were X^2 154.880 and P=0.000, but regarding Do you know about the COVID-19 vaccine the majority of Participant answer Yes were (93.0%) and a significantly relation were X^2 147.920 and P=0.000, while regarding Have you received two doses of COVID-19 vaccines the majority of Participant answer Yes were (98.0%) and a significantly relation were X^2 184.320 and P=0.000 also you willing to take the COVID-19 booster vaccine or take it without any hesitation the majority of Participant answer Yes were (87.0%) and a significantly relation were X^2 109.520 and P=0.000 The results showed that regarding you believe that the COVID-19 vaccine is safe the majority of Participant answer Yes were (80.0%) and a significantly relation were X^2 72.000 and P=0.000 but regarding you think that COVID-19 vaccination has adverse reactions the majority of Participant answer Yes were (69.0%) while No were(31.0%) and a significantly relation were X^2 28.880 and P=0.000, while regarding Do you encourage your family/friends/relatives to get the COVID-19 vaccine the majority of Participant answer Yes were (85.0%) and a significantly relation were X^2 98.000 and P=0.000 also you believe the COVID-19 vaccine and booster dose can reduce the spread of COVID-19 the majority of Participant answer Yes were (89.0%) and a significantly relation were X^2 121.680and P=0.000, While regarding you received COVID- 19 vaccines and booster dose because it is mandatory the majority of Participant answer Yes were (87.0%) answers while No were(13.0%) and a significantly relation were X^2 109.520and P=0.000 but regarding you Do you think that if everyone in society maintains the preventive the majority of Participant answer Yes were (90.0%) answers while No were(10.0%) and a significantly relation were X^2 128.000and P=0.000 while regarding The measures, the COVID-19 pandemic can be eradicated without vaccination the majority of Participant answer No were (51.0%) answers while yes were(49.0%) and no significantly relation were X^2 0.080and P=0.777 The results showed that regarding Do you think Pharmaceutical companies have developed safe and effective COVID-19 vaccines the majority of Participant answer Yes were (77.0%) and a significantly relation were X^2 58.320 and P=0.000 but regarding Have you received COVID- 19 vaccines and booster dose because it is mandatory the majority of Participant answer Yes were (82.0%) while No were(18.0%) and a significantly relation were X^2 81.920 and P=0.000, while regarding . Do you think Mix-Matching the booster dose is safe and effective the majority of Participant answer Yes were (78.0%) and a significantly relation were X^2 62.720 and P=0.000 also Do you believe that only high-risk individuals such as health care workers and elderly persons with other diseases only need COVID- 19 vaccines the majority of Participant answer No were (54.0%) and no significantly relation were X^2 1.280 and P=0.258, While regarding . Do you believe that only high-risk individuals such as health care workers and elderly persons with other diseases no need to COVID- 19 vaccines booster dose the majority of Participant answer No were (69.0%) answers while Yes were(31.0%) and a significantly relation were X^2 28.880 and P=0.000 but regarding Have you recently avoided cultural behaviors, such as shaking hands after vaccinated Against COVID-19 the majority of Participant answer Yes were (70.0%) answers while No were(30.0%) and a significantly relation were X^2 32.000 and P=0.000 while regarding Have You're still practicing social distancing after vaccinated Against COVID-19 the majority of Participant answer Yes were (75.0%) answers while No were(25.0%) and a significantly relation were X^2 50.000 and P=0.000 The results showed that regarding Compliance with the Ministry of Health precautions will prevent signs and Symptoms of the Vaccinate COVID-19 the majority of Participant answer Yes were (90.0%) and a significantly relation were X^2 128.000 and P=0.000 but regarding The appearance of signs and symptoms of vaccination COVID-19 is rapid and severe, so I do not recommend taking the vaccine COVID-19 the majority of Participant answer No were (65.0%) while Yes were(35.0%) and a significantly relation were X^2 [1]8.000 and P=0.000, while regarding .

Table 3 Distribution of acceptability of Covid-19 infection and vaccination among health care workers .

Acceptability				**Chi-square**	
		N	**%**	**X^2**	**P-value**
Weak		69	34.5	49.330	<0.001*
Average		106	53		
High		25	12.5		
Total		200	100		
Score	**Range**	7-32.			
	Mean±SD	16.215+6.111			

This table 3 shows the majority of participant (53.0%) have average of the acceptability towards Covid-19 infection and vaccination followed by (34.5%) of participant weak while Range(7-32) and Mean ±SD(16.215+6.111), while a significantly relation were X^2 49.330 and P=0.001.

Figure (1) : Distribution of acceptability of Covid-19 infection and vaccination among health care workers .

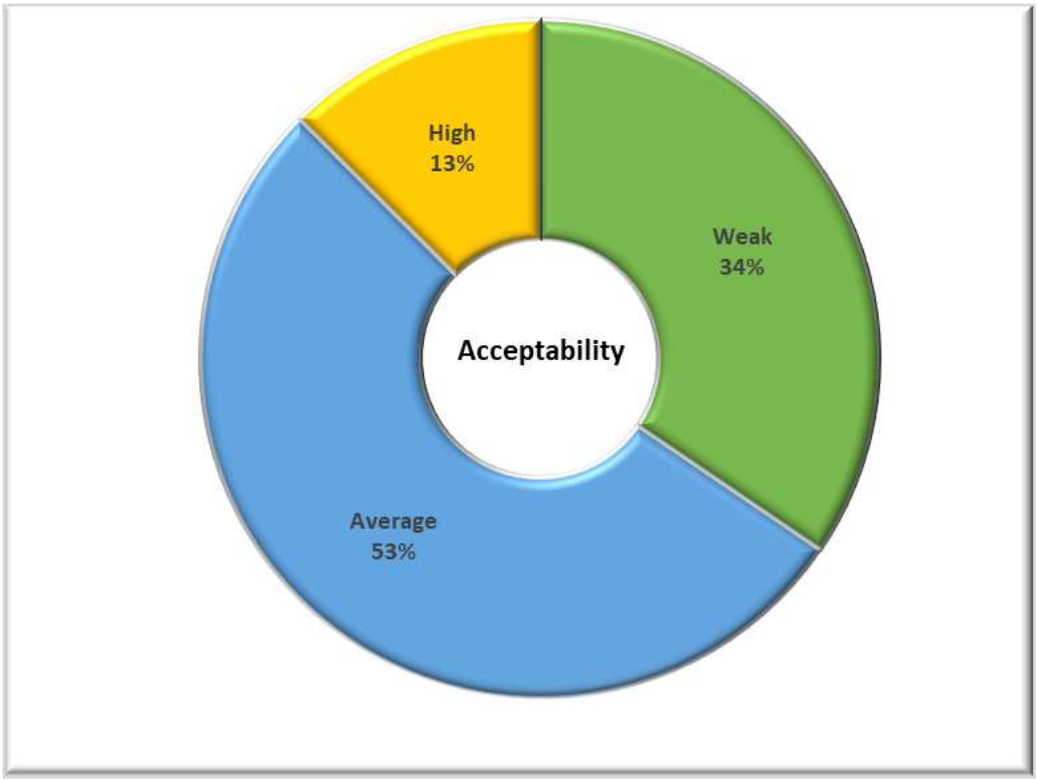

Table 4 Distribution of the associated about awareness of acceptability of Covid-19 infection vaccination and socio-demographic characteristics among health care workers

		N	Acceptability	For T	ANOVA or T-test	
			Mean ± SD		Test value	P-value
Age	<25	30	17.177 ± 5.186	F	8.441	<0.001*
	25-30	44	16.056 ± 6.049			
	30-40	32	15.318 ± 6.486			
	40-50	60	17.689 ± 5.295			
	50-60.	34	16.481 ± 8.046			
Gender	**Female**	170	16.713 ± 6.537	T	1.45	0.148
	Male	30	14.856 ± 6.035			
Marital status	**Single**	44	16.773 ± 6.029	F	3.192	0.0311*
	Married.	140	16.372 ± 6.732			
	Divorced.	6	20.071 ± 5.844			
	Widower	10	18.074 ± 6.061			

Number of children	**Non**	19	17.856 ± 5.698	F	0.8771	0.408
	1	17	16.689 ± 6.151			
	2	31	16.689 ± 5.249			
	more than 2	89	16.356 ± 7.230			
level of education	**Primary/ Intermediate**	20	18.080 ± 5.929	F	7.155	0.001*
	Secondary school	38	17.689 ± 5.468			
	Associates degree	40	15.072 ± 7.392			
	Bachelor's degree	102	16.713 ± 6.388			
Primary Role at Work	**Physician**	46	12.356 ± 7.473	F	12.044	<0.001*
	Nurses	90	17.016 ± 6.470			
	Administrative/clerical staff	30	17.981 ± 5.629			
	Social worker	34	17.540 ± 5.773			
Location of Work	**Ambulatory care**	16	17.356 ± 5.387	F	11.2445	<0.001*
	Emergency Department	12	12.356 ± 9.769			
	Medical and Surgical Inpatient Units	38	15.142 ± 6.113			
	Other	134	17.091 ± 6.095			
Residence	**Rural**	64	17.311 ± 5.776	T	1.407	0.161
	Urban	136	15.899 ± 6.977			

Table 4 show regarding age, results show a significant relation between the acceptability and age were F= 8.441 and P-value=0.001, increase (above 40-50) years the mean +SD were (17.689 ±5.295), regarding gender show no significant relation between the acceptability and gender were T= 1.45 and P-value=0.148, increase (female), the mean +SD were (16.713±6.537). Regarding marital status show a significant relation between the acceptability and marital status were F= 3.192 and P-value= 0.0311, increase(Divorced), the mean +SD were (16.372±6.732), regarding level of Number of children show no significant relation between the acceptability and Number of children were F= 0.8771and P-value=0.408, increase(one and two children) the mean +SD were (16.689±6.151), regarding level of education you have completed show a significant relation between the acceptability and level of education were F=7.155 and P-value=0.001, increase(Primary/ Intermediate), the mean +SD were (18.080±5.929), regarding Primary Role at Work show a significant relation between the acceptability and Primary Role at Work were F=12.044 and P-value=0.001, increase(Administrative/clerical staff), the mean +SD were (17.981±5.629), regarding location of Work show a significant relation between the

acceptability and Location of Work were F=11.2445 and P-value=0.001, increase(Ambulatory care), the mean +SD were (17.356±5.387), regarding Residence show no significant relation between the acceptability and Residence were T=1.407 and P-value=0.161, increase(Rural), the mean +SD were (17.311±5.776).

Discussion

Identifying the factors that can either is a facilitator or a barrier in influencing intentions to uptake or decline the COVID-19 vaccine is important. The results reveal that almost average of the healthcare worker (53.0%) respondents in this study were unwilling to be vaccinated. The purpose of this study was to assess acceptability of a COVID-19 Vaccine among Healthcare Workers in the Kingdom of Saudi Arabia 2022. Socioeconomic characteristics of the among health care workers in Makkah to obtain information that could be used awareness campaign and to determine whether HCW perception of Covid-19 infection and vaccination , most of the participants (30.0%) were in the age group 40-50 years old years, the majority of them were female (85.0%) while male(15.0%), also regarding the marital stats most of participants married were(70.0%)while single were(22.0%), regarding Number of children the majority of participant more than 2 were(57.05%) regarding level of education the majority of participant are Bachelor's degree were(51.0%), regarding the Primary Role at Work most of participants Nurses were(45.0%), regarding Location of Work the majority of participant are Other were(67.0%), also regarding Residence the majority of participant are Urban were(68.0%) .(See Table 1)

Since the initial outbreak of COVID-19 disease in China, it has spread widely to various countries. According to the MOH update on the 20th of April 2020, the number of COVID-19 cases raised to 10,484 in Saudi Arabia. Many studies have reported the importance of awareness, perceptions of attitude and practice about symptoms of the Vaccinate against COVID-19 society to reduce the spreading rate during epidemics and pandemics [27]. Similarly, lack of awareness contributes to undesirable perceptions about the Vaccinate against COVID-19 which leads to negative impacts on infection-control [28]

Therefore, in this study, the acceptability of a COVID-19 Vaccine among health care workers. In this study, we found a significant relation between acceptability of a COVID-19 Vaccine , indicating that the better the level of education was reflected in there . Data from this study indicated a moderate general awareness level of COVID-19 during the COVID-19 outbreak, a similar the awareness about the perceptions the Vaccinate against COVID-19 among health care workers . Was detected in Riyadh and Al-Jouf [29] . A similar level of perceptions was detected among health care providers in UAE , Vietnam and Uganda [30], also my study is similar to another study the vaccine, and COVID-19 vaccines can cause side effects, most of which are mild or moderate and go away within a few days on their own. As shown in the results of clinical trials, more serious or long-lasting side effects are possible. Vaccines are continually monitored to detect adverse events.[31] Reported side effects of COVID-19 vaccines have mostly been mild to moderate and have lasted no longer than few days. Typical side effects include pain at the injection site, fever, fatigue, headache, muscle pain, chills and diarrhea. The chances of any of these side effects occurring after vaccination differ according to the specific vaccine. COVID-19 vaccines protect against the SARS-CoV-2 virus only, so it's still important to keep yourself healthy and well [32]

awareness attitude participants had good awareness about Vaccinate against COVID-19 , like other studies [33]. On the other hand, other studies showed <80% had poor awareness about symptoms of Vaccinate against COVID-19 [30]

A study in China found that 48% of respondents postponed vaccination before confirmation of the safety of the vaccine, which shows their doubt regarding vaccine safety. Worryingly, the exceptionally rapid pace of vaccine development, the skepticism of certain groups of science and health experts might elevate doubt about COVID-19 vaccine [28]

The participants' the socio-demographic data (Age, gender, nationality, marital status, level of education) and attitude and practices about symptoms of the Vaccinate against

COVID-19 among health care workers are significantly associated with participants' awareness, as evidenced by this study Participants' age, results show a significant relation between and age were P-value=0.001. Participants in Saudi Arabia [31] China, USA and Nepal [34] .

Conclusion

This study provides early insight into the acceptability of the COVID-19 vaccine among healthcare workers in Saudi Arabia. There urgent need, to design effective and evidence-based strategies to promote the COVID- 19 vaccine's uptake among healthcare workers. Healthcare workers are at great risk of contracting and spreading the disease and, unless wide-acceptance of the vaccine is achieved, the transmission of the virus would continue and recovery strategies would be hard to accomplish. Of particular importance is also the need for more health-related education among healthcare workers in order to alleviate any fears associated with the vaccine, even though healthcare workers are expected to be more knowledgeable and aware of the benefits and risks of vaccination.

References

1. Al-Hanawi, M. K., Angawi, K., Alshareef, N., Qattan, A. M., Helmy, H. Z., Abudawood, Y., ... & Alsharqi, O. (2020). Knowledge, attitude and practice toward COVID-19 among the public in the Kingdom of Saudi Arabia: a cross-sectional study. Frontiers in public health, 8, 217.
2. Mina, M. J., Parker, R., & Larremore, D. B. (2020). Rethinking Covid-19 test sensitivity—a strategy for containment. New England Journal of Medicine, 383(22), e120.
3. Pranata, R., Henrina, J., Raffaello, W. M., Lawrensia, S., & Huang, I. (2021). Diabetes and COVID-19: the past, the present, and the future. Metabolism, 121, 154814.
4. Scheen, A. J., Marre, M., & Thivolet, C. (2020). Prognostic factors in patients with diabetes hospitalized for COVID-19: Findings from the CORONADO study and other recent reports. Diabetes & metabolism, 46(4), 265-271.
5. Al Hayek, A. A., Robert, A. A., Matar, A. B., Algarni, A., Alkubedan, H., Alharbi, T., ... & Al Dawish, M. (2020). Risk factors for hospital admission among COVID-19 patients with diabetes: a study from Saudi Arabia. Saudi Medical Journal, 41(10), 1090.
6. Shehu, E. (2021). United States and China Power Transition in the Middle East: The cases of the Kingdom of Saudi Arabia and the Islamic Republic of Iran.
7. Qattan, A. M., Alshareef, N., Alsharqi, O., Al Rahahleh, N., Chirwa, G. C., & Al-Hanawi, M. K. (2021). Acceptability of a COVID-19 vaccine among healthcare workers in the Kingdom of Saudi Arabia. Frontiers in Medicine, 8, 644300.
8. Butt, M., Mohammed, R., Butt, E., Butt, S., & Xiang, J. (2020). Why have immunization efforts in Pakistan failed to achieve global standards of vaccination uptake and infectious disease control?. Risk management and healthcare policy, 13, 111.
9. Scheres, J., & Kuszewski, K. (2019). The Ten Threats to Global Health in 2018 and 2019. A welcome and informative communication of WHO to everybody. Zdrowie Publiczne i Zarządzanie, 2019(Numer 1), 2-8.
10. Basch, C. H., Meleo-Erwin, Z., Fera, J., Jaime, C., & Basch, C. E. (2021). A global pandemic in the time of viral memes: COVID-19 vaccine misinformation and disinformation on TikTok. Human vaccines & immunotherapeutics, 17(8), 2373-2377.
11. Althobaity, Y., Wu, J., & Tildesley, M. J. (2022). Non-pharmaceutical interventions and their relevance in the COVID-19 vaccine rollout in Saudi Arabia and Arab Gulf countries. Infectious Disease Modelling, 7(3), 545-560.
12. Assiri, A., Al-Tawfiq, J. A., Alkhalifa, M., Al Duhailan, H., Al Qahtani, S., Dawas, R. A., ... & Jokhdar, H. (2021). Launching COVID-19 vaccination in Saudi Arabia: Lessons learned, and the way forward. Travel Medicine and Infectious Disease, 43, 102119.
13. Cascini, F., Pantovic, A., Al-Ajlouni, Y., Failla, G., & Ricciardi, W. (2021). Attitudes, acceptance and hesitancy among the general population worldwide to receive the COVID-19 vaccines and their contributing factors: A systematic review. EClinicalMedicine, 40, 101113.

14. Wang, J., Jing, R., Lai, X., Zhang, H., Lyu, Y., Knoll, M. D., & Fang, H. Acceptance of COVID-19 vaccination during the COVID-19 pandemic in China. Vaccines (Basel) 2020 Aug 27; 8 (3): 482. doi: 10.3390/vaccines8030482.
15. Barry, M., Temsah, M. H., Alhuzaimi, A., Alamro, N., Al-Eyadhy, A., Aljamaan, F., ... & Al-Tawfiq, J. A. (2021). COVID-19 vaccine confidence and hesitancy among health care workers: A cross-sectional survey from a MERS-CoV experienced nation. PloS one, 16(11), e0244415.
16. Saleh, A. S. A., Mahmoodi, A. H., Alradadi, A. H. A., Al-Ansari, M. M., Majrashi, A. M. H., Mohammed, K. E., ... & Al-otibi, M. M. (2022). Assessment of Perception of Covid-19 Infection and Vaccination among Health Care Workers in Makkah Al-Mokarramah, Saudi Arabia2022. Annals of the Romanian Society for Cell Biology, 26(01), 3103-3120.
17. Biswas, N., Mustapha, T., Khubchandani, J., & Price, J. H. (2021). The nature and extent of COVID-19 vaccination hesitancy in healthcare workers. Journal of community health, 46(6), 1244-1251.
18. Liu, T., He, Z., Huang, J., Yan, N., Chen, Q., Huang, F., ... & Ming, W. K. (2021). A comparison of vaccine hesitancy of COVID-19 vaccination in China and the United States. Vaccines, 9(6), 649.
19. Kukreti, S., Lu, M. Y., Lin, Y. H., Strong, C., Lin, C. Y., Ko, N. Y., ... & Ko, W. C. (2021). Willingness of Taiwan's healthcare workers and outpatients to vaccinate against COVID-19 during a period without community outbreaks. Vaccines, 9(3), 246.
20. Fares, S., Elmnyer, M. M., Mohamed, S. S., & Elsayed, R. (2021). COVID-19 vaccination perception and attitude among healthcare workers in Egypt. Journal of primary care & community health, 12, 21501327211013303.
21. Vellappally, S., Naik, S., Alsadon, O., Al-Kheraif, A. A., Alayadi, H., Alsiwat, A. J., ... & Anil, S. (2022). Perception of COVID-19 Booster Dose Vaccine among Healthcare Workers in India and Saudi Arabia. International journal of environmental research and public health, 19(15), 8942.
22. Foy, B. H., Wahl, B., Mehta, K., Shet, A., Menon, G. I., & Britto, C. (2021). Comparing COVID-19 vaccine allocation strategies in India: A mathematical modelling study. International Journal of Infectious Diseases, 103, 431-438.
23. Zewudie, A., Regasa, T., Kebede, O., Abebe, L., Feyissa, D., Ejata, F., ... & Mamo, Y. (2021). Healthcare professionals' willingness and preparedness to work during COVID-19 in selected hospitals of southwest Ethiopia. Risk Management and Healthcare Policy, 14, 391.
24. Al-Sakkaf, K. A. Z., Basaleem, H., & Bawazir, A. Vaccine Hesitancy and Acceptability of COVID-19 Vaccines among Students in Medical Specialties. The University of Aden, Yemen.
25. Akalu, Y., Ayelign, B., & Molla, M. D. (2020). Knowledge, attitude and practice towards COVID-19 among chronic disease patients at Addis Zemen Hospital, Northwest Ethiopia. Infection and drug resistance, 13, 1949.
26. Wibawa, T. (2021). COVID-19 vaccine research and development: ethical issues. Tropical Medicine & International Health, 26(1), 14-19
27. Erfani, A., Shahriarirad, R., Ranjbar, K., Mirahmadizadeh, A., & Moghadami, M. (2020). Knowledge, attitude and practice toward the novel coronavirus (COVID-19) outbreak: a population-based survey in Iran. Bull World Health Organ, 30(10.2471).
28. Alboaneen, D., Pranggono, B., Alshammari, D., Alqahtani, N., & Alyaffer, R. (2020). Predicting the Epidemiological Outbreak of the Coronavirus Disease 2019 (COVID-19) in Saudi Arabia. International Journal of Environmental Research and Public Health, 17(12), 4568
29. Maleki, S., Najafi, F., Farhadi, K., Fakhri, M., Hosseini, F., & Naderi, M. (2020). Knowledge, attitude and behavior of health care workers in the prevention of COVID-19.
30. Wahed, W. Y. A., Hefzy, E. M., Ahmed, M. I., & Hamed, N. S. (2020). Assessment of knowledge, attitudes, and perception of health care workers regarding COVID-19, a cross-sectional study from Egypt. Journal of community health, 45(6), 1242-1251.
31. Setiawan, A. S., & Zubaedah, C. (2020). Covid-19 Pandemic and Challenges of Dentistry: Application of Health Belief Model on Child's Dental Visit Postponement during the COVID-19 Pandemic. European Journal of Dentistry, 14(Suppl 1), S7.
32. Akalu, Y., Ayelign, B., & Molla, M. D. (2020). Knowledge, attitude and practice towards COVID-19 among chronic disease patients at Addis Zemen Hospital, Northwest Ethiopia. Infection and drug resistance, 13, 1949.

33. Wang, J., Lu, X., Lai, X., Lyu, Y., Zhang, H., Fenghuang, Y., ... & Fang, H. (2021). The changing acceptance of COVID-19 vaccination in different epidemic phases in China: A longitudinal study. Vaccines, 9(3), 191.
34. Singh, D. R., Sunuwar, D. R., Karki, K., Ghimire, S., & Shrestha, N. (2020). Knowledge and perception towards universal safety precautions during early phase of the COVID-19 outbreak in Nepal. Journal of community health, 45, 1116-1122