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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/14497

DOI URL: <http://dx.doi.org/10.21474/IJAR01/14497>



RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT COVID-19 AND VACCINE ACCEPTANCE AMONG FAMILY PHYSICIAN IN AL-MADINAH

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Manuscript Info

Manuscript History

Received: 25 January 2022

Final Accepted: 28 February 2022

Published: March 2022

Key words:-

COVID-19, Knowledge, Attitude, Practice, Survey, Saudi Arabia, Family Medicine, Al-Madinah, Physician

Abstract

Background: COVID-19 vaccination is very important to get immunity agents new against SARS-CoV-2. Also, it's important to know the knowledge and attitude and willing to get vaccination about covid-19 in family physicians cause they are the first line doctor and people get medical information from them so this why we chose this population to assess knowledge and willing to get vaccine. This study aims to assess family physician awareness about covid-19 and its vaccine in al Madinah and to explore the association between knowledge and awareness of covid-19 and acceptance to take its vaccine. The study also assessed the awareness of the covid-19 and the acceptance of covid-19 vaccine.

Methodology: A cross-sectional study that was carried out in Al-Madinah. The study was done on family physicians in Al-Madinah. A self-administered questionnaire was used in previous publications in the English language, the questionnaire was done online. By sending the questionnaire by WhatsApp. Data was verified by hand and then was coded, entered, and analyzed using SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp. Official Data was presented using means and standard deviation and frequency number and percent according to the type of variable. The result will significant if p-value <0.05.

Results: The study included 152 participants, 57.9% were males and 42.1% were females. 61.2% aged between 25- 30 years old and 24.3% aged between 31- 40 years old. 59.9% of participants strongly agree that SARS-CoV-2 can be transmitted by respiratory droplets. 35.5% strongly agree that Symptoms of COVID-19 can be similar with those of seasonal flu. 52.6% strongly agree that COVID-19 cause serious illness and death. 56.6% of study participants wash their hands before and after contact with the patient/patient's environment. 30.9% think there is an available specific drug therapy for COVID-19 while 99.3% think is an available vaccine for COVID-19. However, all study participants received vaccine against COVID-19. Only 63.2% think they have sufficient level of knowledge about COVID-19 and 39.5% intend to take the 3rd dose of vaccine.

Conclusion: Health care professionals are expected to be at high risk for COVID-19 because of contact with confirmed and suspected cases

at the frontline. Family physicians in Saudi Arabia have moderate level of knowledge, attitude and practice towards COVID-19 vaccine.

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Introduction:-

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus (SARS-CoV-2). Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness.¹

Now covid-19 is global pandemic and affect social and economic life around the world. The best way to prevent and slow down transmission of the disease is to be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol- based rub frequently and not touching your face. The virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes.

During late 2019 first case of covid-19 was announced in Wuhan, china. after that more cases was discovered around the world. On 30 January 2020, the Director- General of the World Health Organization (WHO) declared the outbreak of COVID-19 to be a Public Health Emergency of International Concern this led to quarantine around the world. In Saudi Arabia covid-19 is pandemic with first case was recognize at march, 2020 till February,2021 there more than 300.000 infected case and 6000 death.²

Regarding WHO vaccination is safe way to protecting people from getting disease.it use body's natural defenses to develop immunity against infection. There is more then 20 different type of vaccine as diphtheria, tetanus, pertussis, influenza and measles. This vaccines lad to save more than 3 million lives per year.³

After three clinical trial Pfizer-BioNTech vaccine was 95% in prevent illness in people without evidence of previous infection.⁴ In 10/12/2020 Saudi food and drugs authority agree to give Pfizer-BioNTech vaccine approval to be used in Saudi Arabia³.and MOH started first phase of vaccination against covid-19, Till the beginning of February,2021 the number of people that vaccinated in Saudi Arabi is 440,000.⁵

Regarding Saudi Arabi vision (2030) preventing care is one of importing aspect in health system. And vaccine is simple way to prevent and protect people for disease. The specialty that play important role in educate people about information and how to prevent disease is Family physician. So, it's important for family physician to be updated about last information about any medical problem. Also, there are the first line in defeated any challenging problem.

In survey done by dr.verger, in 2020 about attitude of healthcare worker regrading vaccination in France, Belgium and Canada. He found out that Among the 2,768 participants, 72.4% would certainly or probably agree to be vaccinated with it.⁶

On another survey done by dr. brunon, in franch in 2020, about intention to get vaccination during first pandemic wave. about 2047 was participates there is 1.554 (76.9%) would accept a COVID-19 vaccine. There were 431 physicians in survey and intention to get vaccination was 92.1%.⁷

In Saudi Arabia Web-Based National Survey done by doctor Mohammed Al- Mohaithef, in 2020 show that among 992 participants 642 (64.7%) showed interest to accept the COVID-19 vaccine if it is available and 280 (28.2%) said "not sure". Participant aged 45 years and above and being are likely to accept the COVID-19 vaccine than their counterparts.⁸

Before the outbreak dr. Papagiannis assess the Knowledge, Attitudes, and Practices towards Coronavirus of Health Care Professionals in Greece in February 2020. About 500 health care was participant. The majority of participant (88.28%) had a good level of knowledge toward covid-19. The majority of participants (71%) agreed with the temporary traveling restrictions ban. The uptake of a future vaccine against SARS-CoV-2 was estimated at 43%.⁹

Methods:-

This is a cross-sectional study that was carried out in Al-Madinah. It is a city located in the western region of Saudi Arabia. Al-Madinah is one of the two holy cities in Islam, the other is Mecca. With a population of 1,512,724 on the latest census.¹⁰ The primary objective of this study is to assess family physicians' awareness, knowledge, and acceptance toward COVID-19 and its vaccine in Al-Madinah. The duration of this study was 6 months between June 2021 and December 2021. The study was done on family physicians in Al-Madinah. We took the overall number of physicians from Saudi Society of Family and Community Medicine through its official website. The last report was on 2020¹¹, there are 250 family physicians in Al-Madinah.

The inclusion criteria for our study included all Saudi and non-Saudi family physicians (residents, specialists, and consultants) who are currently working in Al-Madinah.

We calculated our sample size using Epi info program which is a statistical software used for sample size calculation. The program developed by Centers for Disease Control and Prevention¹². And our target was 152 physicians.

We have invited 155 physicians to participate in the study randomly to increase the external validity of the study and to account for non-responders by using the random number method which is a simple random sampling technique to minimize selection bias and to increase the statistical power of the study as much as possible. A list of the total number of the study population was generated numbered from 1 to 250, each physician was assigned to a random serial number paired with their phone numbers, after that we will use an online random number generator (<https://www.randomizer.org>) to randomly select our sample. The data collection tool for our study was an electronic self-administered questionnaire in the English language. The questionnaire was sent to each physician through WhatsApp.

The questionnaire¹³ consists of two sections: The first section is about the demographical characteristics of the participants. The second section included questions about knowledge and attitude toward COVID-19 and willing to get vaccinated.

Analytical phase: Data was verified by hand and then was coded, entered, and analyzed using SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp. Official Data was presented using means and standard deviation and frequency number and percent according to the type of variable. The result will be significant if p-value < 0.05.

Results:-

The study included 152 participants, 57.9% were males and 42.1% were females. 61.2% aged between 25-30 years old and 24.3% aged between 31-40 years old. 91.4% of total sample were Saudi nationality. 79.6% work in PHC while 20.4% work in hospitals. 62.5% had 1-5 years of experience, 21.7% between 6-10 years and only 4.6% have experience more than 20 years. 69.1% of participants were residents, 21.1% were attending physicians and 9.9% were consultants in table (1).

Of all participants, 26.3% travelled at the past 6 months out of Saudi Arabia (35.1% of them to Egypt and 16.2% to UAE). 27% of participants have a family member who travelled at the past 6 months out of Saudi Arabia (39% to Egypt and 19.5% to UAE). 39.5% of participants strongly support the ban of travelling for countries with increased cases of COVID-19. Regarding source of information about COVID-19, 26.6% reported Ministry of Health, 26.4% international health organization websites (WHO, CDC), 17.3% from social media platforms, and 15.1% doctors or other healthcare providers as illustrated in table (2).

Table (3) shows that 59.9% of participants strongly agree that SARS-CoV-2 can be transmitted by respiratory droplets. 42.1% strongly disagree that SARS-CoV-2 can be transmitted by the consumption of foods. 35.5% strongly agree that symptoms of COVID-19 can be similar with those of seasonal flu. 52.6% strongly agree that COVID-19 causes serious illness and death. 69.7% strongly agree that washing hands reduce the risk of infection from SARS-CoV-2.

Table (4) illustrates that 56.6% of study participants wash their hands before and after contact with the patient/patient's environment. 75.7% reported receiving special advice by the Hospital infectious committee for COVID-19 and follow them. 30.9% think there is an available specific drug therapy for COVID-19 while 99.3% think is an available vaccine for COVID-19. However, all study participants received vaccine against COVID-19 (34.9% Oxford, 64.5% Pfizer and only 0.7% received both). 53.9% know the last recommendations of WHO for COVID-19. 85.5% think that recommendations by the Saudi health authorities on covid-19 are sufficient. Only 63.2% think they have sufficient level of knowledge about CIVID-19 and 39.5% intend to take the 3rd dose of vaccine.

Table (1):- Sociodemographic characteristics of participants (n=152).

Parameter		No.	%
Gender	Male	88	57.9
	Female	64	42.1
Age	30-25 years old	93	61.2
	40-31 years old	37	24.3
	50-41 years old	14	9.2
	60-50 years old	8	5.3
Nationality	Saudi	139	91.4
	Non-Saudi	13	8.6
Workplace	Hospital	31	20.4
	PHC	121	79.6
Years of experience	5-1	95	62.5
	10-6	33	21.7
	20-11	17	11.2
	More than 20	7	4.6
Job title	Attending physician	32	21.1
	Consulting	15	9.9
	Residents	105	69.1

Table (2):- Travelling history and source of information about COVID-19 (n=152).

Parameter		No.	%
Travelled at the past 6 months out of Saudi Arabia	Yes	40	26.3
	NO	112	73.7
If yes, to	Bosnia	1	2.7
	Egypt	13	35.1
	Emirates	2	5.4
	Jordan	3	8.1
	Maldives	2	5.4
	Morocco	1	2.7
	Paris	3	8.1
	UAE	6	16.2
	Ukraine	4	10.8
	USA	2	5.4
Familiar person travelled at the past 6 months out of Saudi Arabia	Yes	41	27.0
	No	111	73.0
If yes, to	Bahrain	1	2.4
	Egypt	16	39.0
	Emirates	4	9.8
	Jorden	3	7.3
	Paris	3	7.3
	UAE	8	19.5
	Ukraine	4	9.8
	United state	2	4.9
Support the ban of travelling for countries with	agree	33	21.7

increased cases of covid-19	disagree	16	10.5
	strongly agree	60	39.5
	strongly disagree	27	17.8
	uncertain	16	10.5
Source of information about COVID-19	Ministry of Health	111	26.6
	International Health Organization Websites (WHO,CDC)	110	26.4
	Social media platforms	72	17.3
	Doctors or other healthcare providers	63	15.1
	TV / Radio, Scientific books or journals	14	3.4
	Scientific books or journals	26	6.2
	Family/ friends	13	3.1
	TV / Radio	8	1.9

Table (3):- KAP of participants regarding COVID-19 infection.

Parameter		No.	Percent
SARS-CoV-2 can be transmitted by respiratory droplets	Agree	41	27.0
	Disagree	6	3.9
	Strongly agree	91	59.9
	Strongly disagree	6	3.9
	Uncertain	8	5.3
SARS-CoV-2 can be transmitted by the consumption of foods	Agree	12	7.9
	Disagree	54	35.5
	Strongly agree	2	1.3
	Strongly disagree	64	42.1
	Uncertain	20	13.2
Symptoms of COVID-19 can be similar with those of seasonal flu	Agree	77	50.7
	Disagree	12	7.9
	Strongly agree	54	35.5
	Strongly disagree	5	3.3
	Uncertain	4	2.6
COVID-19 cause serious illness and death	Agree	54	35.5
	Disagree	8	5.3
	Strongly agree	80	52.6
	Strongly disagree	1	.7
	Uncertain	9	5.9
Washing hands reduce the risk of infection from SARSCoV-2	Agree	42	27.6
	Disagree	1	.7
	Strongly agree	106	69.7
	Uncertain	3	2.0

Table (4):- KAP of participants regarding COVID-19 infection.

Parameter		No.	Percent
Times washing hands daily	At the end of wok	15	9.9
	Before and after contact with the patient/patient's environment	86	56.6
	Few times (<10 time)	15	9.9
	Often (>10 time)	36	23.7
Receiving special advices by the Hospital infectious committee for COVID-19 and follow them	Yes	115	75.7
	No	37	24.3
There is an available specific drug therapy for	Yes	47	30.9

COVID-19	No	105	69.1
There is an available vaccine for COVID-19	Yes	151	99.3
	No	1	.7
Got vaccinated against covid-19	Yes	152	100.0
Time of taking the vaccine	2021/1	2	1.3
	2021/2	3	2.0
	2021/3	44	28.9
	2021/4	29	19.1
	2021/5	27	17.8
	2021/6	10	6.6
	2021/7	15	9.9
	2021/8	12	7.9
	2021/9	6	3.9
	2021/10	4	2.6
Type of the vaccine taken	Oxford	53	34.9
	Pfizer	98	64.5
	Both Oxford and Pfizer	1	0.7
Know the last recommendations of WHO for COVID-19	Yes	82	53.9
	No	70	46.1
Recommendations by the Saudi health authorities on covid-19 are sufficient	Yes	130	85.5
	No	22	14.5
Level of knowledge about CIVID-19	Inadequate	56	36.8
	Sufficient	96	63.2
After the announcement of MOH that there is 3rd dose for covid-19 vaccine, will you take the 3rd dose	Yes	60	39.5
	No	9	5.9
	I don't no	83	54.6

Discussion:-

After the thorough literature review, we've realized that covid-19 vaccines are very important to get immunity agents against SARS-CoV-2. Also, here comes the importance of assessing the knowledge, attitude, and acceptance toward the covid-19 vaccination among family physicians.

For decades, vaccinations have been considered the best method to control rapidly spreading infectious diseases. That said, many groups and individuals recently started to spread rumors and conspiracy theories aimed against vaccination, intensifying the pressure on healthcare authorities and workers.¹⁴ Vaccine hesitancy is related to attitudes.¹⁵ Even before the release of an effective vaccine, misinformation and unsubstantiated rumors about COVID-19 vaccines circulated and were frequently shared on social media platforms¹⁶. Some have sensationalized the use of mRNA genetic material in several vaccines, claiming that the vaccine can alter human DNA. Furthermore, the rapid development of COVID-19 vaccines has reportedly raised concerns about their safety and long-term effects, even among medical personnel. The results of studies among healthcare workers (HCWs) are concerning, as a small percentage of HCWs do not intend to receive the COVID-19 vaccine.¹⁷

According to our results, all study participants obtained the vaccine. According to a survey conducted in Israel, 78 percent of physicians, 61 percent of nurses, and 75 percent of the general population intended to obtain a COVID-19 vaccine.¹⁸ Another study found that 60.6 percent of the study population was willing to receive the COVID-19 vaccine with a 70 percent or higher efficacy and 79.6 percent with a 90 percent efficacy. Although medical doctors and students were more likely to accept the COVID-19 vaccination, there was no statistically significant difference between the general population, medical students, and healthcare providers such as doctors and nurses, implying that all populations prefer vaccination, implying a general willingness to take the vaccination even though acceptance was proportionally related to vaccine efficacy. However, no statistically significant differences were found between the general population, medical students, medical doctors, and paramedics.¹⁹ Another study of the Saudi general population found that 64.7 percent were willing to take the vaccine.²¹ According to the most recent systematic review of recent literature on the general populations of 33 countries, vaccination acceptance varies by geographical

location and income level. Kuwait (23.6 percent) and Jordan (28.4 percent) have low acceptance, while Italy (53.7 percent), Poland (56.3 percent), and Russia have moderate to half acceptance (54.9 percent). In contrast, some countries, particularly in East Asia, demonstrated high acceptance, including Indonesia (93.3 percent), China (91.3 percent), and Malaysia (94.3 percent). This implies that vaccine acceptance should be encouraged and expanded in order to achieve the population-based immunity required to control the pandemic.

In our study, 59.9% of participants strongly agree that SARS-CoV-2 can be transmitted by respiratory droplets. 35.5% strongly agree that Symptoms of COVID-19 can be similar with those of seasonal flu. 52.6% strongly agree that COVID-19 cause serious illness and death. A study found that approximately half of the participants (56.2%) were aware that isolation of themselves if they have COVID-19 symptoms, putting them at risk of disease exposure. 20.7% strongly agreed, and 16.3% agreed, with having concerns about possible severe complications from the vaccine. That said, doctors ranked the lowest for concerns on vaccine complications wherein 15.5% strongly agreed, and 17.3% agreed, to having such concerns, which may trigger COVID-19 vaccine hesitation. Stronger public health expert interventions and large-scale population-based campaigns are needed to reduce such hesitation and build public trust on this issue [19]. Another study reported that majority of HCWs are aware that patients with comorbid illness are at high risk of infection and mortality from COVID-19, which accounts for approximately 91.1%.²² The finding of our study is also consistent with the finding of Vietnam healthcare workers' knowledge of COVID-19.²⁴

Regarding the practice of health care professionals, 56.6% of study participants wash their hands before and after contact with the patient/patient's environment. 75.7% reported receiving special advices by the Hospital infectious committee for COVID-19 and follow them. Only 63.2% think they have sufficient level of knowledge about COVID-19 and 39.5% intend to take the 3rd dose of vaccine. Another study shows 81.4% were practicing handwashing with alcohol and soap.²² This result was lower compared to a study by Gambhir RS et al., where 94.2% of health care professionals were using alcohol rub or soap and water to clean their hands after treating patients.¹⁴ Variation might be due to prior exposure to similar outbreak and difference in hospital protocol. Mask-wearing adherence was reported among 68.1%, while 18.4% strongly agreed, and 63.2% agreed, to social distancing as protective measures, indicating social compliance with established guidelines of physical distancing.¹⁹ However, this is less than previously reported in China where 96.6% of the general public adhered to wearing facemasks.²⁰

Regarding source of information about COVID-19, 26.6% reported ministry of Health, 26.4% international health organization websites (WHO, CDC), 17.3% from social media platforms, and 15.1% doctors or other healthcare providers which was not in accordance with a study reported that the majority of healthcare workers gathered information regarding COVID-19 from social media (73.6%) and television (71.5%)²² This is in contrast to previously published findings in Saudi Arabia, where the Ministry of Health's website is the primary source of information.²³ Similar findings were reported in previous studies in Vietnam²⁴, but differed from studies in Saudi Arabia (36% and 40%, respectively), where a relatively small percentage of HCWs used social media as a source of information about COVID-19.^{25, 26}

Awareness creation and changing attitudes were among the public health interventions recommended by the World Health Organization (WHO). In our study, knowledge about vaccine was significantly associated with Saudi nationality and working in PHC. Various studies have shown that demographic, social, and technological factors affect the level of knowledge, attitude, and practice toward disease and its prevention.²⁴

Ethical considerations:

Ethical approval was obtained from the research ethical local committee of al Madinah health affairs by the number: H-D3-M-D84. Also, an administrative approval was taken from general directorate of education in Al-Madinah. All the participants were required to sign a consent section that is included in the questionnaire. The participation of this study is voluntary, and the participants can withdraw from the study at any time. The privacy and confidentiality of all participants was assured.

Conclusion:-

Health care professionals are expected to be at high risk for COVID-19 because of contact with confirmed and suspected cases at the frontline. Family physicians in Saudi Arabia have moderate level of knowledge, attitude and practice towards COVID-19 vaccine. Developing strategies to reduce public scepticism and increase trust is critical for the successful implementation of vaccination programs.

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