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Knowledge and attitude toward COVID-19 vaccines among Iraqi People

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Abstract

The COVID-19 pandemic has already invaded the entire world. Iraq recorded the first confirmed case of "Corona" in the late of February 2020 in Najaf Governorate, southern of Iraq. Then the pandemic invasive rapidly all governorates. Iraq as all countries endeavored to get the vaccines to control of covid-19. Iraqi Ministry of Health announced the arrival of the first dose of the vaccines in March 2021. The ministry clarified the reluctance of Iraqi citizens to take the vaccine. Therefore, this research aims to study the knowledge and attitudes of Iraqis toward COVID-19 vaccines. Survey Monkey was conducted using a structured questionnaire in May, 2021 among Iraqi people. The study shows that around 50.6 % of the participants have insufficient knowledge about COVID-19 vaccines. While, it finds that 72.59 % of them have neutral attitudes towards these vaccines. Research on the acceptability of COVID-19 vaccines shows that most people are uncertain about the use of vaccines. There was a significant relationship between knowledge and age, gender and knowledge, residential area and knowledge, age and attitude, education level and attitude, gender and attitude, and residential area and attitude. Attitude towards the COVID-19 vaccine was moderate, with many indicating that they do not know.

Keywords: Knowledge • COVID-19 • Vaccines • Corona

Introduction

COVID-19 has become a significant health scare to the public health sector because of the disruptions it has caused to the healthcare system. The disease has disrupted economic and all other sectorial operations globally. Millions have died ever since the first case was reported in Wuhan, China. COVID-19 is a respiratory disease that severely damages a patient's respiratory system; fatalities are significant in persons with comorbidities such as obesity, diabetes, hypertension, and kidney disease. Iraq recorded 595291 cases with 12813 of deaths due to COVID-19 in 2020. The concept of herd immunity comes to the fore when the question of vaccinations is raised. The possibility of herd immunity relies on the knowledge and attitude towards COVID-19. The purpose of this research paper is to determine the degree of knowledge and attitude towards COVID-19 vaccines [1].

Historical importance of vaccines

For decades, the vaccination route has been the best method medical scientists have used to control the rapid spread of diseases. Rumors have been spread regarding the use of vaccinations for the wrong reason; the rumors have degenerated into conspiracy theories aimed against the use of vaccination to control diseases. The conspiracy theories aimed at vaccination have intensified the pressure experienced by healthcare authorities and workers in their quest to deliver care. The development of COVID-19 vaccines is ongoing, with the goal being to address the mutated state of the virus. Candidate vaccine development is underway in Europe and North America by renowned companies. The vaccines have been prioritized for health workers and high-risk populations [2].

Delays in low- and middle-income countries

Low- and middle-income countries experience delays in vaccination administration for a number of reasons. The first is that public trust is lacking; the second is that the resources are scarce, and the third is that supply is scarce since high-income countries tend to secure significant amounts of vaccines without looking at the needs of other countries. However, such countries have a lot of debate regarding the viability of the vaccines to counter COVID-19. For instance, many Ethiopians hesitate to get the COVID-19 vaccine; a global survey on the potential of COVID-19 vaccines shows that 48% of the population remains uncertain about vaccination. Research in China also showed that only about 54% of the population sought to get vaccinated [6]. Research on COVID-19 awareness and attitudes towards the use of vaccines is scarce, given that COVID-19 is a recent pandemic [3].

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Perception and attitude towards vaccines

In the research conducted by Lin et al. (2020), 54.6% indicated that they had a probable intent to get a COVID-19 vaccine; 28.7% had a definite intent of doing so. The participants in the study showed a low perception of susceptibility; many (68.7%) disagreed with the notion that they would get COVID-19 in a few months. 72% disagreed with the notion of currently getting COVID-19. The research reported that the respondents thought highly of the COVID-19 vaccine. 92.5%perceived that the vaccine was beneficial and helped to reduce the incidence of COVID-19. The barrier constructs for resistance towards COVID-19 vaccines is that the vaccine is faulty or fake, and its affordability is low. Of the skeptical respondents, 92.1% said that they would only be vaccinated against COVID-19 if they get informed concerning the disease.

The research conducted by Mesesle (2021) showed that the overall level of awareness was 40.8%, which is less than half of the respondents. The awareness score was 4.3/7 (SD=1.1). The scores for attitude were 4.09/9 (SD=2.16); the positive attitude level was 24.2%. The level of education, access to media sources, and urban residence are significantly associated with awareness of the COVID-19 vaccination. Participants in the study by Elhadi et al.(2021) agreed with the notion that they had concerns about complications from using the vaccines, with 20.7% strongly agreeing and 16.3% just agreeing. 79.6% would accept the vaccine if it had an efficacy of 90% and above. Therefore, literature shows that the knowledge and attitude of COVID-19 vaccines largely depend on the population of the study [4].

Materials and Methods

Four sets of structured questions were analyzed in the study pertaining to the attitude, knowledge, and perception of COVID-19 vaccines. The participants were required to respond to the questions designed to check on the attitude, perception, and knowledge of COVID-19, among other factors.

Study participants were recruited from Iraqi people. The recruitment and study were conducted using Survey Monkey on a convenience sampling basis in May, 2021. Two thousand six hundred forty participants have indicated their interest in the research, but nine dropped out of the research. Data collection took place online after capabilities were developed to facilitate an online survey. A Chi-Square test was performed to determine the relationship between the categorical variables [5].

Results

Contains the attitudes the respondents had towards vaccines. On the questions of safety and essentiality of the vaccine, the majority of the respondents indicated that they did not know (56.6% and 43.3%, respectively). Only 15.2% and 34.2% thought they knew about the vaccine's safety and essentiality. The majority (45.3%) would not take the vaccine without hesitation and would not encourage (43.7%) family, friends and people they care about to take the vaccine (Tables 1-4).

Variables		F.	%
Age	(19 or less)	40	1.5
	(20 - 29)	840	31.9
	(30 - 39)	850	32.3
	(40 - 49)	471	17.9
	(50 - 59)	360	13.7
	(60 - 69)	69	2.6
	(70 and more)	1	0
Gender	Male	1251	47.5
	Female	1380	52.5
Education Level	Read and Write	20	0.8
	Primary	20	0.8
	Secondary	170	6.5
	University	1751	66.6
	High education	670	25.5
Residential Area	Urban	2401	91.3
	Rural	230	8.7
Work Type	Student	700	26.6
	Employee	1671	63.5
	Earner	120	4.6
	Retirement	40	1.5
	Not working	100	3.8

Table 1. Socio-demographical Data.

Question		F	%
Have you infected with Corona disease?	Yes	1010	38.4
	No	850	32.3
	Do not Know	771	29.3
	Total	2631	100
Are you going to have COVID-19 vaccine?	Yes	880	33.4
	No	1271	48.3
	May Be	480	18.2
	Total	2631	100
Source of your knowledge about COVID-19 vaccines	Social Medias	1160	44.1
	WHO website and reports	400	15.2
	Official news in newspaper of TV	541	20.6
	Ministry of Health Reports and News	250	9.5
	Family and Friends	280	10.6
	Total	2631	100

Table 2. Information about COVID-19.

Statement		F	%
1. I know the effectiveness of the Corona vaccine.	Yes	820	31.2
	No	1051	39.9
	May Be	760	28.9
2. COVID-19 vaccine causes death or serious illness.	Yes	530	20.1
	No	690	26.2
	May Be	1411	53.6
3. There is a dangerous to use Corona vaccine.	Yes	790	30
	No	330	12.5
	May Be	1511	57.4
4. Corona vaccines increase autoimmune diseases.	Yes	590	22.4
	No	711	27
	May Be	1330	50.6
5. Corona vaccines prevent transmission of infection to others.	Yes	630	23.9
	No	890	33.8
	May Be	1111	42.2
6. Newly discovered COVID-19 vaccines may have serious side effects	Yes	1581	60.1
	No	130	4.9
	May Be	920	35
7. Do you think that if everyone in the community followed preventive measures, the COVID-19 pandemic could be eradicated without vaccination?	Yes	1571	59.7
	No	430	16.3
	May Be	630	23.9

Table 3. General Knowledge about Corona Vaccines.

Statement		**F**	**%**
1. Newly discovered COVID-19 vaccine is safe	Yes	400	15.2
	No	741	28.2
	Do not Know	1490	56.6
2. The COVID-19 vaccine is essential to us	Yes	900	34.2
	No	591	22.5
	Do not Know	1140	43.3
3. I will take the COVID-19 vaccine without any hesitation	Yes	840	31.9
	No	1191	45.3
	Do not Know	600	22.8
4. I will encourage my family/friends/ relatives to get vaccinated	Yes	830	31.5
	No	1151	43.7
	Do not Know	650	24.7
5. It is not possible to reduce the incidence of COVID-19 without vaccinations	Yes	820	31.2
	No	771	29.3
	Do not Know	1040	39.5
6. The COVID-19 vaccine should be distributed fairly to all of us	Yes	1390	52.8
	No	461	17.5
	Do not Know	780	29.6
7. I think the COVID-19 vaccine will help protect the people who take it	Yes	1020	38.8
	No	450	17.1
	Do not Know	1161	44.1
8. I appreciate the advice of health professionals regarding the effectiveness of the COVID-19 vaccine	Yes	1720	65.4
	No	300	11.4
	Do not Know	611	23.2
9. The vaccine can be an alternative to following safety measures such as wearing masks, sterilizing hands or social distancing	Yes	870	33.1
	No	1170	44.5
	Do not Know	591	22.5
10. You must take the vaccine even if you have previously had corona disease	Yes	980	37.2
	No	870	33.1
	Do not Know	781	29.7
11. I think this vaccine will not give the necessary immunity	Yes	1080	41
	No	420	16
	Do not Know	1131	43
12. I had a bad experience with the vaccine	Yes	250	9.5
	No	1440	54.7
	Do not Know	941	35.8
13. Corona will go away like any other flu	Yes	1551	59
	No	260	9.9
	Do not Know	820	31.2
14. I do not want to take the vaccine because I am afraid of injection	Yes	451	17.1
	No	1870	71.1
	Do not Know	310	11.8
15. I believe in natural and traditional remedies and there is no need for a vaccine	Yes	921	35
	No	1230	46.8
	Do not Know	480	18.2
16. I am generally against vaccinations	Yes	631	24
	No	1740	66.1

	Do not Know	260	9.9
17. I fear the side effects of the vaccine	Yes	1951	74.2
	No	400	15.2
	Do not Know	280	10.6
18. I am waiting to see the side effects of vaccines on others	Yes	1650	62.7
	No	660	25.1
	Do not Know	321	12.2
19. I think the vaccine is a conspiracy in biological warfare	Yes	930	35.3
	No	750	28.5
	Do not Know	951	36.1
20. There is no need to take a vaccine because I contracted Corona disease	Yes	550	20.9
	No	1260	47.9
	Do not Know	821	31.2
21. The vaccine is not reliable	Yes	1330	50.6
	No	551	20.9
	Do not Know	750	28.5
22. Time was too short to test the effectiveness of vaccines	Yes	1771	67.3
	No	320	12.2
	Do not Know	540	20.5
23. I won't get vaccinated because I don't want to be like a lab rat	Yes	1461	55.5
	No	840	31.9
	Do not Know	330	12.5
24. The vaccine may cause me to get corona disease	Yes	830	31.5
	No	900	34.2
	Do not Know	901	34.2
25. Vaccines are just a profitable business for their manufacturers	Yes	1361	51.7
	No	540	20.5
	Do not Know	730	27.7

Table4: Attitude toward Corona Vaccines.

The test for significance was conducted using the Chi-Square test. From the tests conducted, the relation between knowledge and age was determined to be statistically significant ($0.000 < \alpha = 0.05$). The relation between gender and knowledge was also statistically significant ($0.000 < \alpha = 0.05$), along with that between residential area and knowledge. Statistically significant relations were also derived between age and attitude ($0.000 < \alpha = 0.05$), education level and attitude ($0.000 < \alpha = 0.05$), gender and attitude ($0.000 < \alpha = 0.05$), and residential area and attitude ($0.000 < \alpha = 0.05$) (Tables 5-8).

Knowledge Level	F	%
Good	10	0.4
Neutral	1290	49
Poor	1330	50.6

Table5: Knowledge Level about Corona Vaccines.

Attitude	F	%
Positive	0	0
Neutral	1910	72.59
Negative	721	27.41

Table6: Attitude toward Vaccines.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	676.660a	84	0
Likelihood Ratio	657.512	84	0
Linear-by-Linear Association	6.289	1	0.012
N of Valid Cases	2631		

a. 46 cells (43.8%) have expected count less than 5. The minimum expected count is .00.

Table7: Relation between Age group and Knowledge.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	105.807a	14	0
Likelihood Ratio	114.892	14	0
Linear-by-Linear Association	0.261	1	0.61
N of Valid Cases	2631		

a. 2 cells (6.7%) have expected count less than 5. The minimum expected count is 4.75.

Table8: Relation between genders and Knowledge.

The attitude of the respondents concerning COVID-19 was shaped by their age, level of education, gender, and places of residence. Knowledge concerning COVID-19 also depended on age, gender, and area of residence. A good explanation can be driven from the sources of information individuals trust for COVID-19 news. The majority prefer social media sites to official communication avenues. Just like in the study conducted by Lazarus et al. (2020), most of those featured in the research were hesitant to be certain about the COVID-19 vaccine; 48% of the sample population was uncertain about vaccination. Research in China also showed that only about 54% of the population sought to get vaccinated (Tables 9-12).

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1753.168a	56	0
Likelihood Ratio	484.875	56	0
Linear-by-Linear Association	10.661	1	0.001
N of Valid Cases	2631		

a. 36 cells (48.0%) have expected count less than 5. The minimum expected count is .08.

Table9: Relation between educational levels and Knowledge.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	123.534a	14	0
Likelihood Ratio	163.555	14	0
Linear-by-Linear Association	6.677	1	0.01
N of Valid Cases	2631		

a. 3 cells (10.0%) have expected count less than 5. The minimum expected count is .87.

Table10: Relation between residential areas and Knowledge.

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1683.149a	216	0
Likelihood Ratio	1550.485	216	0
Linear-by-Linear Association	0.48	1	0.488
N of Valid Cases	2631		

a. 155 cells (59.8%) have expected count less than 5. The minimum expected count is .00.

Table11: Relation between ages with Attitude.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	407.526a	36	0
Likelihood Ratio	338.766	36	0
Linear-by-Linear Association	34.889	1	0
N of Valid Cases	2631		

a. 22 cells (29.7%) have expected count less than 5. The minimum expected count is .87.

Table12: Relation between educational level and Attitude.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	285.801a	36	0
Likelihood Ratio	334.603	36	0
Linear-by-Linear Association	1.034	1	0.309
N of Valid Cases	2631		

a. 9 cells (12.2%) have expected count less than 5. The minimum expected count is 4.75.

Table13: Relation between gender and Attitude.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	407.526a	36	0
Likelihood Ratio	38.766	36	0
Linear-by-Linear Association	34.889	1	0
N of Valid Cases	2631		

a. 22 cells (29.7%) have expected count less than 5. The minimum expected count is .87.

Table14: Relation between residential areas and Attitude.

Discussion

The current research intended to determine the state of knowledge and attitude toward COVID-19 vaccines among Iraqi people. Determining this required evaluation of the study population's general knowledge about vaccine, attitude toward a vaccine, the relation between age with knowledge, the relation between gender with knowledge, the relation between educational level with knowledge, the relation between the residential area with knowledge, the relation between age with attitude, the relation between educational level with attitude, the relation between gender with attitude, and the relation between the residential area with attitude [5]. A total of 2631 respondents were involved in the survey. 38.4% were reported to have contracted COVID-19, 32.3% said they did not get infected, and 29.3% said they did not get infected. More people (48.3%) said that they would not get the COVID-19 vaccine; 33.4% said they would, while 18.2% indicated that they were unsure that they would get a COVID-19 vaccine. The opposite finding in the study which finds that 57% of the sample willing to have the COVID-19 vaccine. The information in was collected to show the general knowledge concerning the COVID-19 vaccine. The knowledge level of the COVID-19 vaccine was mainly poor (50.6%), while the attitude was

neutral (72.59%). Knowledge on the effectiveness of the Corona vaccine was low (39.9%: do not know the effectiveness of the vaccine; 31.2%: know the effectiveness of the vaccine). Moderate knowledge of the Corona vaccine was 28.9%. 20.1% believed that the COVID-19 vaccine causes death or illness; 26.2% said it does not, while 53.6% were moderate on the issue. Whether the Corona vaccine caused diseases, most were unsure (responded maybe, i.e., 50.6% said Corona vaccine maybe increases autoimmune disease). 60.1% believed that newly discovered vaccines could have serious side effects. 59.7% believe that if the community acted according to the preventive measures given, COVID-19 could be eradicated even without vaccination [5]. This said that they appreciated the advice given to them by health professionals on the effectiveness of the COVID-19 vaccine. The majority (44.5%) do not believe that vaccines could serve as alternatives to other measures such as social distancing, wearing masks, and sterilizing the hands. While 41%believed that vaccines would not give the immunity an individual needs, 43% did not know whether it would. The majority (54.7%) did not have a bad experience after being vaccinated; 59% believed that COVID-19 would eventually disappear like other forms of the flu. However, the majority (74.2%) said that they feared the side effects they experienced from receiving the vaccine; 50.6% think it cannot be relied upon. The relevant result found in the study by Issanov A. et al.(2021), who concluded that the hesitancy of COVID-19 vaccine appears to be increased among the participants. While another study conducted among Bangladeshi people concludes a positive attitudes towards the vaccines of COVID-19 [2]. The findings from the research were consistent with what exists in most COVID-19 literature. The general feeling among with most COVID-19 literature is that the perception of COVID-19 vaccines is mostly undecided. Just like the findings of Mesesle (2021), the findings of the current study determined that close to half of the population is skeptical about COVID-19 vaccines. These finding is unlike the results of Islama S. et al. (2021), who reflect in their study inadaquate knowledge among participating people in Bangaladesh community [3].

Conclusion

Research on the acceptability of COVID-19 vaccines shows that most people are uncertain about the use of vaccines. There was a significant relationship between knowledge and age, gender and knowledge, residential area and knowledge, age and attitude, education level and attitude, gender and attitude, and residential area and attitude. Attitude towards the COVID-19 vaccine was moderate, with many indicating that they do not know.

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