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Attitude towards COVID 19 vaccination among Libyan population attending the health centers in Benghazi city

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Abstract

Background. Vaccination is an effective approach to prevent infection and reduce mortality of many infectious diseases. Vaccine hesitancy, a behavior manifested by delay in acceptance or refusal of vaccines despite availability, was considered as a global health threat in 2019.

Aim: to assess the attitudes (hesitancy and acceptance) of Libyan population in Benghazi city to the novel corona virus disease 19 (COVID-19) vaccines.

Methods. this is a cross-sectional survey, included all Libyans attending Benghazi health centers, which amounted to 916 participants, selected randomly.

Results. The study found that more than half of the participants, 52.4 %, believed the vaccine has a positive influence on community health, 21.2 % believed the vaccine is necessary for community health, 22.6 % believed the vaccine is harmful to community health and 3.6 % with no opinion.

Conclusions. Most participants have a positive attitude towards COVID19 vaccines. One reason behind not taking the vaccine was the participants' belief that it leads to serious complications. The other reason was the scarce availability of the vaccine. It is necessary to increase public awareness of the pandemic and raise their confidence and knowledge regarding the efficacy and safety of COVID-19 vaccines to maximize the success of vaccination programs, as well as providing an easy access to the vaccine. Further work in exploring and tackling this subject is needed in order to achieve herd immunity in the era of COVID-19 pandemic.

Keywords. corona virus disease-19, vaccines, severe acute respiratory syndrome, COVID-19.

1. Introduction

The corona virus disease-19 (COVID-19) was eventually spread over the world after the first case of severe acute respiratory syndrome (SARS-CoV-2) was discovered in Wuhan, China, in late December 2019. ⁽¹⁾ The COVID-19 pandemic had a significant impact on the burden of sickness and fatalities globally ⁽²⁾.

Social distancing strategies were effective for alleviating COVID-19 ⁽³⁾. However, this non-pharmaceutical intervention came at a high cost as it resulted in reduced economic activity ⁽⁴⁾.

The use of vaccines is a successful strategy for preventing infection and lowering the mortality rate of numerous infectious diseases ⁽⁵⁾. The most effective main preventative method for battling the COVID-19 pandemic is a vaccination ^(6,9). The World Health Organization (WHO) recommended that prospective vaccinations have a minimum threshold of 50% efficacy in lowering illness risk at the population level ⁽¹⁰⁾. The most long-term solution to control the current epidemic has been found as a safe and effective COVID-19 vaccination. ⁽¹¹⁾

Vaccine hesitancy can have negative impacts on the community as well as the individual (higher risk of contracting the disease) (greater virus transmission) ⁽¹²⁾. Vaccine hesitancy was described as a "delay in acceptance or refusal of vaccination despite availability of vaccination services" by the WHO Strategic Advisory Group of Experts on Immunization in 2015 ⁽¹³⁾. Vaccine acceptance is a key factor in the effectiveness of immunization programs since it represents how the general public views disease risk, vaccine attitudes, and vaccine demand ⁽¹⁴⁾.

According to WHO, as a global health threat in 2019, three main factors contribute to not taking the vaccine ⁽¹⁾: individuals may lack confidence

in, and be scared of vaccines, especially with the misunderstanding that vaccines pose a risk of infection, in addition to other myths; ⁽²⁾ individuals do not perceive a need for a vaccine (e.g. due to underestimating disease severity) or do not value the vaccine; and ⁽³⁾ individuals or community may have difficulties accessing the vaccine ⁽¹⁵⁾. For the first two reasons, misinformation spread through multiple channels could have played an important negative role ⁽¹⁶⁾.

The attitude of Libyan peoples toward COVID-19 vaccination was not studied up to this article writing and in Benghazi city so the purpose of this study is to assess the attitudes (hesitancy and acceptance) of Libyan population in Benghazi city to the novel COVID-19 vaccine and the reasons why not taking, or not willing to take the COVID-19 vaccine.

2. Methodology

A cross-sectional descriptive study. Includes twenty-one health care centers have been choosing geographically to represent all areas in Benghazi city. Data were collected along a course of one month (1st to 31th August / 2021). Libyan individuals attending any of the twenty-one health care centers, as well as health worker in the same centers. The sample size included 916 participants. Benghazi city population around 1 million and for sample size have to be 384 (Krejcie & Morgan), but because of the importance of the study and the magnitude of the COVID 19 we select big sample size

Data collection: semi-structured questionnaire was the tool of data collection by interview method, the questionnaire was in two parts; the first part included participant's demographic characteristics (Gender, age, marital status, educational level and

occupation), the second part of the questionnaire was designed to determine attitudes towards COVID-19 vaccine, vaccine hesitancy and factors that could influence these attitudes, whether they believed that a COVID-19 vaccine has a beneficiary or harmful effects on community health, whether they think the vaccine is necessary for community health to protect the people from infection, and whether the participants had access to the vaccine. Taking the questionnaire was voluntary, brief, and took only few minutes of their time.

Data management and analysis:

Data were analyzed using the statistical package of social science version 23. Descriptive statistics were generated, such as frequency, percentage, mean, and standard deviation, and were used to provide a demographic profile of participants. Inferential statistics such as; chi square test to assess the differences between proportions was used. $P < 0.05$ used to denote statistical significance.

Ethical considerations: verbal consent was obtained from all participants before conducting the interview. The purpose of the study was explained in a simple informative way. All information collected kept strictly confidential.

3. Results

The survey was completed by the 916 individuals, geographically distributed between the specified health centers. The highest number of participants came from Al-Kish Center (65) and the lowest number came from Benghazi city Center (10) as illustrated in Table 1.

The participants were aged (16 – 95), mean age 42.3 ± 13.3 , and three quarter (75.6%) of them were between 27- 48 years old, 54% were females and 66.8% of the total were married

(Figures 1 and 2). Regarding education background, 32% had a high school certificate and below level of education and 47.6% had bachelor's degree (Figure 3).

The study found that more than half of the participants, 481 (52.5%), believed the vaccine has a positive influence on community health, 194 (21.2%) believe the vaccine is necessary for community health, and 208 (22.7%) believe the vaccine is harmful to community health and 33 (3.6%) with no opinion. The study revealed that 350 (38%) of participants were vaccinated (Figure 4).

The cause of not having the vaccine was of two main reasons (demonstrated in Table 3): fear of participants from untoward complications (150 participants) constituted (26.5%) of the sample, and no access to the vaccine (126 participants, constituted 22.3%).

There were a statistical significant differences between groups in terms of age and occupation (Table 4). Younger participants ($P = 0.004$) were vaccinated with COVID-19 vaccination more than older participants. In addition, vaccination rate was higher amongst doctors and government employees. There were no significant differences related to gender, marital status or education level ($P = 0.11, 0.31, 0.05$).

Participants of age group between 27- 48 years old, married, doctors and employee had a more positive attitude with COVID-19 vaccine, P value was 0.005, 0.001 and 0.000 respectively (Table 5). There were no statistical differences between gender, and education level with

COVID-19 vaccine ($P = 0.07$ and 0.09 respectively) (Table 5).

Health center	No.	%
Benghazi medical center	50	5.5
Alsalmami center	29	3.2
Aloroba center	44	4.8
Elkish center	65	7.1
Almajory polyclinic	46	5.0
Center of city polyclinic	10	1.1
Alzririahya center	50	5.5
Showhada Azoaoa center	50	5.5
Elfoyhate center	24	2.6
Alhwari center	41	4.5
Iben zoher center	51	5.6
New Benghazi polyclinic	50	5.5
Bo-Athni polyclinic	50	5.5
Sidi Hussain center	47	5.1
Sidi yonis center	50	5.5
Gharyouns center	10	1.1
Alakha polyclinic	50	5.5
Benghazi oncology center	50	5.5
Benghazi heart center	49	5.3
Benghazi kidney center	50	5.5
Benghazi ophthalmology center	50	5.5
Total	916	100.0

Table 1: Distribution of participant according to the health center.



Figure 1: Distribution of participants according to age / years.

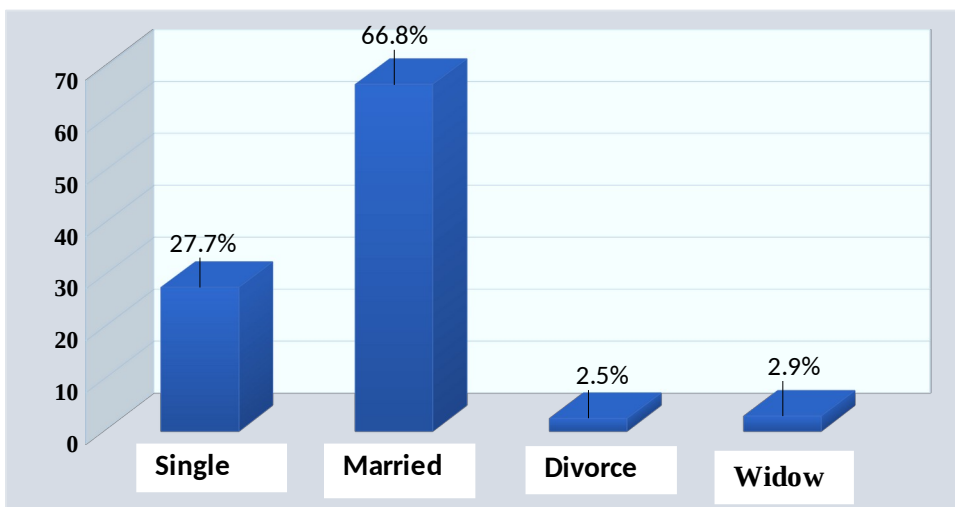


Figure 2: Distribution of participants according to marital status

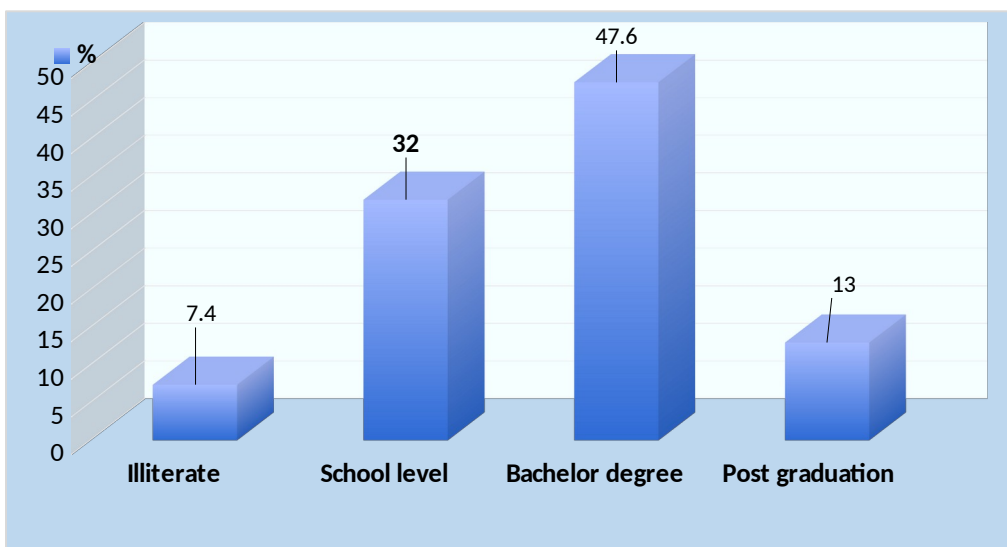


Figure 3: Distribution of participants according to education level.

Occupation	No.	%
Army	38	4.1
Athletic	1	.1
Business man	80	8.7
Doctors	103	11.2
Gov. Employee	303	33.1
House wives	97	10.6
Unemployed	53	5.8
Nurses	88	9.6
Policemen	1	.1
Retired	35	3.8
Students	55	6.0
School Teachers	62	6.8
Total	916	100

Table2: Distribution of participants according to occupation.

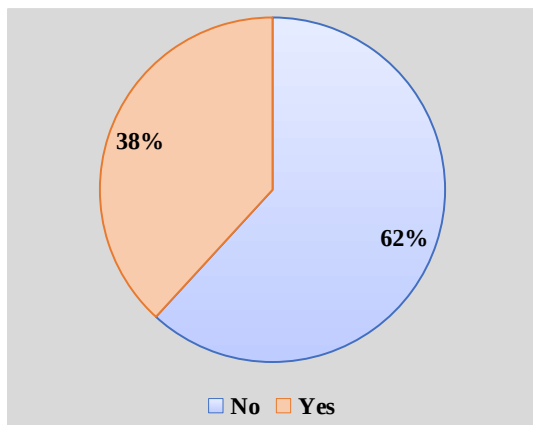


Figure 4: Distribution of participant if the participant vaccinated

Cause	No.	%
I am afraid of it and its complications	150	26.5
I don't believe in vaccines	111	19.6
I have no knowledge about it	44	7.8
No benefits of vaccines	31	5.5
Not available	126	22.3
Others	104	18.4
Total	566	100

Table 3: Distribution of participant's reasons of not vaccinated.

Variable	Vaccinated		Total	P value
	Yes	No.		
Sex				
Females	176	320	496	0.11
Males	176	244	420	
Age/years				0.004
16 – 26	28	79	107	
27 – 37	87	175	262	
38 – 48	107	170	277	
49 – 59	79	95	174	
60 – 70	39	37	76	
> 70	12	8	20	
Marital status				0.319
Single	81	173	254	
Married	252	360	612	
Divorce	8	15	23	
Widow	11	16	27	
Education level				0.057
Illiterate	16	52	68	
School level	103	186	289	
Bachelor degree	177	263	440	
Postgraduate	56	63	119	
Occupation				0.000
Army	5	33	38	
Business man	26	54	80	
Doctor	66	37	103	
Employee	116	183	299	
Housewife	35	62	97	
Unemployed	11	44	55	
Nurse	35	53	88	
Policeman	0	1	1	
Retired	20	17	37	
Student	22	33	55	
Teacher	16	46	62	
Athletic	0	1	1	
Total	352	564		

Table 4: Differences in vaccination between the groups.

Variable	Good	Bad	Required	No opinion	P value	
Sex						
Female	244	117	120	15	0.074	
Male	237	91	74	18		
Age / years						
16-26	43	41	18	5	0.005	
27-37	130	56	60	16		
38-48	154	53	62	8		
49-59	97	43	32	2		
60-70	45	13	16	2		
>70	12	2	6	0		
Marital status						
Single	105	85	53	11	0.001	
Married	352	113	127	20		
Divorce	9	4	8	2		
Widow	15	6	6	0		
Education level						
Illiterate	33	24	11	1	0.092	
School level	157	66	49	15		
Bachelor degree	229	95	102	11		
Post graduate	62	24	29	5		
Occupation						
Army	14	17	1	6	0.000	
Businessman	45	22	12	1		
Doctor	68	8	26	1		
Employee	162	66	59	12		
Housewife	50	15	27	5		
Unemployed	22	16	17	0		
Nurse	42	30	14	2		
Policeman	0	0	1	0		
Retired	23	7	6	1		
Student	21	19	10	50		
Teacher	33	8	21	0		
Athletic	1	0	0	0		
Total	481	منطقة الرسم		33		

Table 5: Differences in participant's opinion.

Discussion

The study was conducted to demonstrate the participant's attitudes and practice toward the COVID19 vaccine, willingness to take it and possible reasons for vaccine hesitancy. To the best of our knowledge, the study is the first to evaluate attitudes toward COVID-19 vaccination among Libyan population. Understanding the influencing factors of the acceptance of COVID-19 vaccination and identifying common barriers and facilitators for vaccination decisions are important aspects in the design of effective strategies to improve the vaccine coverage rate among the general population.

The participants were 75.6% of them were between 27- 48 years old, while in study done by (Jeffrey V. Lazarus, et al) 62.4% were between 25-54 years old, 54% were women which consist with the same study 53.5% of participant were women. Regarding education background, 47.6% had university degree however more than the study (Jeffrey V. Lazarus, et al) 36.3% were with same degree ⁽¹⁷⁾. The study found that 52.5% accepted the vaccine, which was more than showed in the study done in Egypt by (Shimaa M Saied, et al) was 35%. ⁽¹⁸⁾.

In this study there was a statistical difference in attitude according to age, similar to study conducted by (Jeffrey V, et al. 2020) ⁽¹⁷⁾. There were a statistical significant differences in attitude between groups in terms of age, younger participants were had good attitude more than older participants, similar to the studies (Jeffrey V, et al.), (Alle YF.2021),(Mesesle M. 2021,), and no differences between male and female, unlike the same study where there was small difference that men had a slightly less positive attitude than women. In general, this sample of Benghazi city population had a positive attitude to COVID 19 vaccine (52.5%), which was slightly less than the percentage published by a study done in united states (Reiter PL, et al 2020) ⁽²¹⁾. The finding was comparable with the studies conducted in Ethiopia on health professionals in which around 42.3% of the participants had a positive attitude ⁽¹⁹⁾.

However, the finding was higher than the e-based survey conducted in Ethiopia in which only 24.2% of the participants had a positive attitude towards the COVID-19 vaccine ⁽²⁰⁾.

Trust in vaccine effectiveness and its safety is important in vaccine acceptance by people. 26.5% of our participants did not accept the vaccine and did not take it because of fear for their safety. However less than study by (Shimaa M Saied) (Mohamed-Hussein AA,) 39.57% and 57%

irrespectively^(18, 22). The finding in current study revealed that 7.8% of the participant did not take the vaccine because no enough information about it, while study in Egypt by (Shimaa M Saied, et al 2021) the most confirmed barriers of COVID-19 vaccination was insufficient information regarding the vaccine itself (72.76%). There were a statistically significant differences between groups in terms of age Younger participants were had good attitude and vaccinated with COVID-19 vaccination more than older participants, similar to the studies (Alle YF.), (Mesesl M.)^(19,20).

A significant percentage (22.3%) of participants attribute their not having the vaccine to unavailability, a blame that should be fallen on the shoulders of the health authority.

In order to achieve the public health goals of vaccination programs to COVID-19, it is important to understand the attitudes of the population towards it. Public awareness of the disease, their confidence in the value and safety of the vaccines would maximize the success of the vaccination program. Early availability of vaccines to population should have been a priority of the health authority. Further work exploring this subject is needed to persuade acceptance of vaccination in order to achieve herd immunity in the era of COVID-19 pandemic.

Conclusions

There was a generally positive attitude among the Benghazi city population towards COVID-19 vaccine. However, a significant number of participants did not take the vaccine. One reason behind not taking the vaccine was their refusal for fear of serious complications. The other reason was attributed to unavailability of the vaccine. Lack of public awareness of the danger of the pandemic, misinformation and no information about the vaccines and its effectiveness may have played an

important role behind refusal of vaccination. We should not disregard, however, the problem of accessibility that many participants expressed.

In order to improve the adoption of COVID-19 vaccines, the government, health authority decision-makers, medical professionals, must collaborate and make efforts to lessen reluctance and enhance awareness about immunizations.

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