COVID-19 pandemic vaccination acceptance among Basrah Medical College staff: A pilot study

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Abstract
Background: The COVID-19 pandemic, which was caused by a coronavirus that causes severe acute respiratory syndrome, continued as a danger to the healthcare system, with worldwide financial, educational, and societal ramifications. Vaccines are an important new tool in the COVID-19 fight. Vaccine reluctance and skepticism among the global population was a key impediment to achieving an adequate coverage rate. Method: A cross-sectional study was conducted among Medical College staff, special questionnaire was used for this proposes, consisted of questions covering socio demographic data that included age, gender and education, Also questions related to whether persons have ever had COVID-19 infection at personal and family level , questions about the means of prevention of COVID- 19 and questions about acceptance of COVID-19 vaccine were also included . Results: Out of the 114 participants, a total of 98 candidates completed responses and were used in the analysis, the vast majority of those who responded were from younger age groups (33.7±14.9) years, the COVID-19 vaccine's acceptance rate among Medical College staff was 45.3%, much lower than the hesitance rate (54.7%). About 26.6%of participant got infected with Corona virus and from them 3%were severe and admitted to hospital, and about 73.4% did not get the disease. Regarding their family members 8.2%of the family members got severe infection with COVID 19 and admitted to hospital and 30.6 % of them treated in outpatient, more than half of participants reported that mask, social distancing, hand washing and avoiding of overcrowding with case isolation are most preventive measures, while only 34.7% of participant reported that immunization against Corona Virus as preventive measure. Conclusion: The results indicated a low rate of acceptance of the COVID-19 vaccine among medical college staff, emphasizing the importance of addressing any concerns regarding vaccine's skeptics by providing accurate knowledge about the vaccine's efficacy and safety.
Keywords: Vaccination Hesitancy; Basrah, COVID-19

1. Introduction

Vaccines save millions of lives each year and were among the most cost-effective and effective public health initiatives ever, vaccine prevent life threatening infectious diseases for all age groups in the world (1-3). The immune system of the body is stimulated by the vaccines to enhance the ability of the body to fight the invading disease agents including viruses. When the immune system is exposed to the disease-causing microorganism's germ after immunization, it will have the ability to recognize and destroy these germs in order to avoid any ill consequences.

Coronavirus disease 2019 (COVID-19) was caused by a novel virus strain later known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (4-7). It was firstly discovered in a large city in China called Wuhan in late 2019, and since that, approximately two hundred and twenty nations were affected by the virus's consequences. (4, 5). On the eleventh of March 2020, the World Health Organization (WHO) declared it a pandemic. (8)In October 2020, More than 49,373,235 confirmed cases and 1,243,083 deaths were registered worldwide (9).

The pandemic has had a severe impact around the world, and It continues to be a concern to the health service, with far-reaching financial, educational, and societal consequences. (6,7). Most government's ground approach sought to decrease the pandemic's spread, by applying several non-pharmaceutical measures, like enhancing social distance, immigration restriction, hand washing, school suspension, mask obligation, and partial or complete city lockdowns. (10).

Developing effective vaccinations is one essential method for halting the COVID-19 pandemic's spread. Immunization is an essential component of the preventive strategy to contain the pandemic. Scientists from all over the world are working with enormous efforts to develop effective and safe vaccines against COVID-19 disease (11, 12).

Three vaccinations from Western pharmaceutical

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corporations have been licensed by international regulatory bodies as of January 2021, and inoculation with the Chinese and Russian vaccines had begun. (13). The success achieved so far is remarkable and the performance on the ground is encouraging that the pandemic may come under control in a short time. A vaccination, in addition to current preventive efforts, could shorten the pandemic's duration, however, estimates suggest that a prospective vaccine would need to be at least 80 percent efficacy and more than 75 percent of the population should receive the vaccine. (14). One of the most beneficial effects of the vaccination program is that we could have herd immunity without requiring a large population to be infected, and only enough population is required to be vaccinated instead. Although the well-known vaccination effect on reducing and even eliminating the coronavirus disease, its success still depends on personal and population desire. Even so, the exact benefit of vaccination programs cannot be achieved without the acceptance and uptake by a large population. (13-15). Personal ideas, interpersonal factors, in addition to the lack of trust in the healthcare services and even those who are responsible for developing and distributing the vaccines, all influence what is called as "vaccine acceptance". Additionally, several other factors can play a major role in the confidence about the exact need for a vaccination such as; the actual benefits and safety of existing vaccinations; this is known as 'vaccine hesitancy.' Meanwhile, it is one of the major obstacles that can prevent reaching such a goal in addition to skepticism among the population. (16-18). The term 'vaccine hesitancy' was defined as "delay in acceptance or refusal of vaccination despite the availability of vaccination services" according to the World Health Organization Strategic Advisory Group of Experts (SAGE) (17).

Such skepticism was observed in a study conducted in the United States to see the response of people to the vaccine and found that; half of the studied participants were willing to be vaccinated, the other half divided into 30 percent unsure and 20 percent who refused the vaccine uptake. (19).

Only 28% of HCWs in the Democratic Republic of Congo were willing to get the COVID-19 vaccination, according to research done out there. (20). And only one-third of HCWs in the United States were willing to get the COVID-19 vaccine, according to another study. (21). COVID-19 vaccine adoption was predicted to range from 54.8 percent in Russia to 88.6 percent in China globally; most Western countries (59–75 percent) demonstrated reasonably good public acceptance of the vaccination. (22). Vaccine apprehension is a public health concern, and the underlying causes could have a considerable impact on the uptake of a SARS-CoV-2 vaccine. In addition to that rumors about efficacy, safety and conspiracy also play a major role.

In Iraq, the coverage rate is quite low not exceeding 10% as of September 30, 2021. That due to vaccine acceptance among Iraqi population is very low.

The objectives of this pilot study was planned to explore the acceptance and vaccine hesitancy among staff of Basrah Medical College, causes of non-acceptance and to assess their knowledge about preventive measures of COVID-19 .

2. Method

A cross-sectional study was conducted from 15th of March to the 15th of April 2021. A convenience sample approach of 114 candidates was used in this research, medical college staff were invited to participate in the study and the sample consist of staff of the college of medicine in Basrah-southern Iraq. The data were collected using special questionnaire for this purpose, and collection was during the period of lockdown in Basrah and Iraq to control the spread of corona virus, which coincided with the sit-ins of graduates of institutes and colleges. So, information was taken only from all those staff who have partial working time in this period and those who response to participate in the study. The questionnaire form consisted of questions covering sociodemographic characteristics that included age, gender, education, and questions on the risk of COVID-19 at personal and family level during the period since the start of the pandemic. Participants were requested to identify means of prevention from a given list and to state whether they would take the vaccine or not when available. Informed consent was taken from the participants. A total of 98 candidates' completed replies have been gathered and used in statistical analysis. The data had been analyzed and illustrated using the Statistical Package for Social Science version (SPSS 20). For socio demographic and categorical data, descriptive analyses were utilized. The factors that influence COVID-19 vaccination acceptability, hesitancy and their knowledge about important preventive measures were analyzed. A *p*-value of less than 0.05 was applied as a significant value statistically.

3. Results

Demography: A total of 98 respondent were included in this study, the age of the study population ranged from 30-50 years, with mean age for females (60%) about 34.37 years and SD of 14.37year and for male (40%) the mean age was 32.59 years with SD 15.28 years . About 69.3% of them had undergraduate degree and middle and low school education. The remaining 30.7% were post graduate student, and all of them were permanently employed. Table. 1

Table 1. Sociodemographic characteristics of the participants

Gender	No. Of participants	Mean age ± SD	P Value
Male	39	32.59+15.28	0.565
Female	59	34.37+14.73	
Total	98	33.66+ 14.90	
Education (degree)	Number of participants	%	
School education (low-middle)	20 (7-13)	20.4	
Undergraduate	48	48.9	
Postgraduate	30	30.7	

Risk of COVID-19: From Table 2, about 26.6%of participant got infected with Corona virus and from them 3%were severe and admitted to hospital, and about 73.4% did not get the disease. Regarding their family members 8.2% got severe infection with COVID 19 and admitted to hospital and 30.6 % of them treated in outpatient, About 60.2% of the family members not have the disease.

Table 2: Study population according to history of COVID -19 infection at personal and family level.		
History of COVID-19	No.	%
At personal level: Got the disease and admitted to hospital Got infection and treated as outpatient Did not get disease	3 23 72	3.1 23.5 73.4
At family level: At least one member admitted to hospital At least one family member treated as outpatient No family member got disease	8 31 59	8.2 31.6 60.2
Total	98	100

Knowledge about prevention: Regarding their knowledge about preventive measures of COVID-19 (Table 3), more than half of participants reported that mask ,social distancing ,hand washing and avoiding overcrowding/social gathering with case isolation are most preventive measures , while only 34.7% of participant reported that immunization against Corona Virus as a preventive measure.

Table 3: knowledge of study population about the means of COVID-19 transmission prevention		
Reported means of prevention	No.	%
Masks: Yes No	64 34	65.3 34.7
Distancing Yes No	63 35	64.3 65.7
Hand washing Yes No	55 43	56.1 43.9
Avoiding overcrowding Yes No	51 47	52.0 48.0
Isolation of cases Yes No	53 45	54.1 45.9
Immunization Yes No	34 64	34.7 65.3
Total	98	100.0

Vaccine acceptance: The results (Table 4) indicate that 45.9% 0f the participant would accept taking the COVID-19 vaccine among which (71.1%) would take the vaccine due to their fear from the disease (13.3) trust in the Ministry of Health and trust in the vaccine manufacturers (8.9%).

Reasons given by non-accepters were: fear from the vaccine 43.4%), (no trust in manufacturers (18.9%) and no trust in the Ministry of Health (9.4%). A substantial proportion could not express any reason (28.3%) for not taking the vaccine.

Table 4: Distribution of studied population according to reasons of acceptance or non-acceptance the vaccine.		
Would you take the vaccine?	No.	%
Yes	45	45.9
Why do you take it?		
Fear from disease	32	71.1
Trust the manufacturers	4	8.9
Trust the Ministry of Health	6	13.3
No answer	3	6.7
No	53	54.1
Why do not you take it?		
No trust in manufacturers	10	18.9
No trust in Ministry of Health	5	9.4
Fear from the vaccine itself	23	43.4
No answer	15	28.3
Total	98	100.0

4. Discussion

One of the most effective measures against communicable diseases in the current and past history of health and health care was the development and wide scale use of vaccines. Vaccination has saved millions of lives each year (1-3). The attainment of a high coverage a vaccination programme depends on the adequate supply, effective logistics and acceptance of the public. This study was done to explore the views of those who are involved in the healthcare system work and teaching future doctors to identify their acceptance or otherwise of COVID19 vaccine. Such understanding will help direct the educational strategy to promote vaccines among the population. Vaccine adoption is a difficult decision that is influenced by individual healthy behaviors, personal factors, and distrust of the public health system and those who manufacture and distribute vaccines. It is worthy to say; the development of a new vaccine which characterized by its efficacy and safety will change the role and save billions of lives, but till that time, we have to obligate the general instructions and restrictions regarding mask-wearing, crowds avoidance, and social distances. Meanwhile, and till now there is a lack of information and knowledge about how much vaccine can prevent transmissibility and infection in addition to its role against the disease. Additionally, even if we benign vaccinated, we have to reserve and obligate the health-related instruction and regulations in order to save ourselves and others from any serious illness, and even if we had a previous infection of COVID-19, we have to take the vaccine, whatever its is available and feasible rather than waiting. In spite of the well-known that, there is no vaccine had 100 percent protection, coronavirus vaccines can play a major role in preventing severe illness and death. (23).

Results of this study which were obtained on person close to health care system found that, younger age groups were present the majority of the participants, mean age was 36 ± 14.9 years. This could be due to the fact that elderly are no longer employed at the health care institutions after retirement. About half of them expressed acceptance of the vaccines and some of them have already received initial doses. Despite the participant's awareness about the vaccine, the acceptability rate is much lower in the present study due to their relation to healthcare system. Students were more receptive in the occupation category than those working in medical and health occupations, according to a Malaysian study. While this study

finding was different from the Sudia Arabia study reported higher acceptance level 64.7% (24). The result higher than Jordanian population acceptance 37.4% of COVID-19 vaccine (25) . According to a study based on a sample of 19 nations, the global coverage of COVID-19 vaccination ranges from 54.8 percent in Russia to 88.6 percent in China (22).

A study about Acceptance of COVID 19 among college students in south Carolina found that student did not trust the information of pharmaceutical companies(26) while in this study those who not take the vaccine about 43%of them fear of disease itself, Those who were hesitant said they were worried about the vaccine's adverse effects, efficacy, and insufficient information., and only 18% not trusted manufacturer companies, meanwhile, it found that 59% of the Jordanian population had a trust on the ability of the pharmaceutical firms to develop a vaccine depicted by its efficacy and safety according to a study conducted on that issue (25).

Regarding the Medical Staff knowledge about preventive measure of COVID-19, only 34.7% of participant reported that immunization against Corona Virus as preventive measure and more than half of participants reported that mask, social distant, hand washing and avoiding of overcrowding with case isolation are most important preventive measures. These results revealed that the participant hesitated regarding the COVID-19 vaccine safety and effectiveness as preventive measure against corona virus infection and due to their lack of adequate information about the vaccine. This study's results were better than those obtained from study conducted in Congo on the health care workers, in which one-third of the studied participants were willing to get the vaccine. (20). additionally, a study was conducted in the United States recorded that one -third of the participants were willing to get immunized. (21).

5. Conclusion

The findings show that the COVID-19 vaccine has a low level of acceptance among medical college staff. This stance is likely to be prevailing at general population level and could explain in part the low level of vaccine coverage until this moment in Iraq.

6. Recommendation

To prevent further deaths and contain the spread of the pandemic, it is critical to emphasize the following issues: the actual value of vaccine to the population, and promote immunization and vaccine acceptability, especially among those who are vulnerable to the infection consequences. Additionally, hesitant individuals should be treated carefully by managing their concerns in term of enhancing the trust about the vaccine in regard to its safety and efficacy by encouraging proper and full information about it., particularly among those who refuse the vaccine because of its relationship to the healthcare system. It's crucial to know who is more likely to be hesitant about vaccination in order to know how to intervene and urge immunization. Public health authorities must implement systematic initiatives to reduce vaccination reluctance and promote vaccine acceptability. Finally, establishing a quick and effective vaccination campaign is the only way to terminate the COVID-19 outbreak in Iraq and save as many lives as possible.

Conflict of interest

The authors have no conflict of interest.

Consent of Ethics

Administrative approval was taken from all places where samples were collected, as well as written and oral consent was taken for all participants in the research

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