The willingness of the middle and south of Iraq's population to accept different types of covid19 vaccines.

Doaa Qasim[1], Maitham Ali AL-Rikabi[2], Alhasan M AlMudhaffer[3]

[1]MSC. The University of Basra, College of Pharmacy, Basra, Iraq.
[2]PhD Clinical Pharmacy, college of pharmacy, Basra University, Basra, Iraq.
[3]PhD Clinical Pharmacy, AL-Fayhaa General Hospital, Basra, Iraq.
Email: doaaqasim2014@gmail.com

Abstract

Population around the world had huge concern toward COVID19 disease that affect directly or indirectly on all populations' lives. It caused by novel virus called sever acute respiratory syndrome coronavirus-2 (SARS-CoV-2), therefore; The Iraqi Ministry of Health (MOH) and numerous scientific agencies had advised to promote population for receiving Covid19 vaccines as Largest astride of an attempt to reduce the serious challenges burden of Covid19 in global. Aims of Study are: 1-To evaluate prevalence of the willingness to accept different types of COVID19 vaccines in middle and south of Iraq. 2- Compare the vaccinated and unvaccinated of the southern Iraqi population and detection some factor behind acceptance of COVID19 vaccines. Method: Based Cross-Sectional Observational Study utilized validated questionnaire.it conducted from 5 February to 5 April 2022 and distribute in two ways ,online and manually, depending on the different living locations of the participants. Results: The total number of participants' responses was 767. It is obtained from the distribution of surveys in different ways. 104 of participants were excluded due to not giving complete answers to the survey questionnaire. On the other hand, 42 of the participants were excluded due to not living in the middle and south of Iraq. 621 participants from the total participant response were enrolled in the study analysis. Half of participants were 50.08% female and other half were 49.92% male with 52.33%of the participants were married. About two-third of the participants accepted to receive covid19 vaccines (75.68%) ,while 24.31%of the participants were unvaccinated(14.65%of them hesitant and 9.66% rejecters). Most of participants were from Basra city (79.87%) and more than half of them were vaccinated and other were unvaccinated (71.98% versus28.02%) (P value=0.000). Two-third of the participants had graduated degree bachelor and more (75.8%) and the percent of vaccinated group of them were significantly higher than unvaccinated (80.9% versus19.1%) (P value = 0.000). Less than half of the participants were the healthcare providers (35.91%) and the percent of vaccinated group of them were significantly higher than unvaccinated (82.96%versus17.04%) (P value=0.002). A small percent of the participants had a chronic disease (15.46%) and 79.17%of them accepted to receive covid19 vaccines which was higher than unvaccinated (20.83%, where 9.3%hesitant and 11.45% rejecters). More than half of participants had sign and symptoms of Covid19 infection (61.84%) and 78.39% of them were vaccinated which was significantly higher than unvaccinated (21.61%) (P value=0.046) and only 41.22% of them were diagnosed by doctor. More than half of the participants had one of the family members and/or friends died from corona virus (66.51%) and79.18% of them were vaccinated which was significantly higher than unvaccinated (20.82%) (P value=0.004). Conclusion From above results, the percent of covid19vaccines acceptance was higher than hesitancy and rejection. The higher rate of covid19 vaccines acceptance could be related to many factors that might affect on the success of vaccinated programs, including: level of education, place of living, had sign and symptoms of Covid19 infection have family members and/or friends died from covid19 and are members of the health care providers.

1. Introduction

Modern human pandemic disease that have large of world population concern and have many challenges that affect on their life directly or indirectly is coronavirus infection disease (Covid 19).It represented one of the emerging disease of the respiratory system that appeared firstly in Wuhan, China at December 2019 1.From this date, the life of almost population will be changed due to high spreadity of the covid19 disease and high severity reach with the main characteristics of symptoms like dry cough, muscle aches with hyperthermia …etc.2 Global Researchers deeply thought to overcome these challenges by searching for the diverse medicals protocols in order to treat and protect of the dangerous pandemic disease of covid19. Still explorer, others attempts to protect and maintain the human; therefore, searching to explore vaccine against covid19. Many of companies concentrate

huge achievement for manufacturing of covid19 vaccines by several different ways some of them used either part of viruses like spike of protein or whole virus after attenuated. After that, Global scientific reached to introduce savior solution to maintain human life, that it's called Covid19 vaccines. These keys had essential role for regulating severity of covid19 and reducing enrolled hospitalization. The firstly more than 100 covid19 vaccines candidates to be developed at fast pace in 8 April2020. After this date, the five vaccines of covid19 entered phase I clinical trials 3 with continue to enter other phase of clinical trials development. The larges facts and fakes distributed among different community that have a more effect on the opinion about acceptance of almost population to covid9 vaccines. These included: the serious side effect of covid19 vaccines, the human reservoir of this vaccines will be converted to zombie, vaccines one of the human worries made by human to kill the high percent of population in Future, covid19vaccines might affect on fertility on both male and female in the future and vaccines is being as machine implanted inside human body to follow it. But some of these opinions would be changed after period of time of development of vaccines especially when the vaccines development performed among many population receivers without dangerous adverse effects and getting of FDA approval in 23 August2021.

Iraqi Ministry of Health (MOH) and numerous scientific agencies had advised to promote population vaccination and become legally mandatory of receiving it. This work were be as largest astride of an attempt to reduce the serious challenges burden of COVID19 to reduce mortality rate of covid19.In spite of, Some Iraqi population still have hesitancy and rejection of covid19 vaccines. Considering loss of clinical trials of the studies and research related to covid19 vaccine in Iraq. There is urgent need to know the prevalence of hesitancy or rejection of covid19 vaccines among southern Iraqi population; Therefore, The current study represent the 1st study registered in clinical trials to evaluate the rate of acceptance, hesitancy and rejection to covid19 vaccines among southern Iraqi population with forecast of some the circumstances that will affect on rate of acceptance or not.

2. Methodology
3. Material and Method

2.1 -Study Design& setting

The total number of participants' responses was 2171. It is obtained from the distribution of surveys in different ways. 150 of participants were excluded due to not giving complete answers to the survey questionnaire.

Online Based Cross-Sectional Observational Study (OBCSO study) utilized validated questionnaire in Arabic language in order to accomplish on general population in the south of Iraq and distribute among the different types of social media like Facebook,whatsapp and others from 5 February to 5 April2022. The utilizing validated questionnaire from previous study [4] that return for previous one used to estimation Jordanian hesitancy toward covid19 vaccine[5].The good questionnaire design for this research was sent to more famous person's population and influencer on community via different social media like Facebook,Whatsapp, E-mail etc. The pilot study was performed on 21 participants in order to know if the questionnaire of the survey were difficult to understand by participants. Those participants were not included in the study analysis. The current study represents the 1st study registered in clinical trials of Iraq at the number of registrations NCT05256602 at the time of carrying out.

2.2 Ethical consideration
The agreement of study was obtained from college of pharmacy, University of Basra and from the continuing education and development centers in Ministry Health of Basra with writing consent from all participants to fill this questionnaire as tool.The study not have any intervention with participants.

2.3 Characteristic of Enrolled participants and Sampling kinds in the current study

625 of Iraqi population 18years and older both male and female and living in south of Iraq were enrolled in study.

All participants either vaccinated or not with different types of covid19 vaccines should fill the survey and answered all questions. Four of participants were excluded from total sample due to not living in the south of Iraq.

Inclusion Criteria

1-Vaccinated and unvaccinated participant with different kinds of covid19 vaccines.
2-Both male and female18years or older southern Iraqi population.
3-Accept to fill and answer all questions of the survey.

Exclusion criteria

All subjects were not living in the south of Iraq or with mental retardation.

2.4 The questionnaire of study as Utensil and procedures assemblage of data

Firstly,the validated questionnaire as instrument from previous study found when the literature searched utilizing PubMed and other searching engines. After choosing this utensil was translated to Arabic language by different translators because Iraqi population belong to countries in which Arabic considered as basic language .These Arabic questionnaires distributed among Iraqi population, then adapted to make pilot study on 20 known persons with different education level, interviewed face to face and asking if there is any parts in utensil not understand from 1stdecember 2021 to 1stjanuary2022, then making some modification on some questionnaire after taking feedback from them;

after that trying to make statistical analysis by the statistical package for social science (SPSS)program version 22 after complete pilot study ,face validity and content uniformity with simplicity of the questionnaire parameter to general southern Iraqi population. The data collection from pilot test not enter to total sample of research in statistical analysis, the Google form online validated questionnaire survey was carried out on general population from 5 February to 5 April2022 without knowing any names or emails in order not to be tracked but study still working.

A total 625of Iraqi population rejoinder to complete the survey.

The questionnaire content as tool included:

1-Socio-demographic data (age, gender, marital status, education level, places of livings).

2-History of chronic diseases.

3- Information of Iraqi population about covid19 disease and covid19 vaccines.

2.5- Statistical analysis

All of The Data that obtained in the current study were analyzed by the statistical package for social science (SPSS®) version 22 (SPSS® Inc., Chicago, IL, USA). the number and percentages were used to categorized the variables. Chi-square test was used to assess the difference between respondents vaccinated and unvaccinated toward the covid19 vaccines by knowing of P value (when P-value <0.05 that considering statistical is significant).

4. Result

Sample characteristics

During two–months of study period, 621 of southern Iraqi population were completed the survey. The characteristics of participants showed in table (1). Half of participants were 50.08% female and other half were 49.92% male with 52.33%of the

participants were married. About two-third of the participants accepted to receive covid19 vaccines (75.68%), while 24.31%of the participants were unvaccinated (14.65%of them hesitant and 9.66% rejecters)as we showed in Figure (1). The percent of vaccinated participants were significantly higher than unvaccinated. Most of participants were from Basra city (79.87%) and more than half of them were vaccinated and other were unvaccinated (71.98% versus28.02%) (P value = 0.000). So, the vaccinated participants who living in Basra were significantly higher than unvaccinated participants.

Two-third of the participants had graduated degree bachelor and more (75.8%) and the percent of vaccinated group of them were significantly higher than unvaccinated (80.9% versus19.1%)(P value = 0.000).Less than half of the participants were the healthcare providers (35.91%) and the percent of vaccinated group of them were significantly higher than unvaccinated (82.96%versus17.04%)(P value=0.002).As showed in Figure(2). A small percent of the participants had a chronic disease (15.46%) (28.12% hypertension and 27% of diabetes) and 79.17%of them accepted to receive covid19 vaccines which was higher than unvaccinated (20.83%, where 9.3%hesitant and 11.45% rejecters toward covid19 vaccines).More than half of participants had sign and symptoms of Covid19 infection (61.84%) and 78.39% of them were vaccinated which was significantly higher than unvaccinated 21.61%) (P value=0.046) and only 41.22% of them were diagnosed by doctor. More than half of the participants had one of the family members and/or friends died from corona virus (66.51%) and79.18% of them were vaccinated which was significantly higher than unvaccinated (20.82%) (P value=0.004). As showed in Figure (3).Most of participants 91.14% had someone in family members or friends infected with covid19.

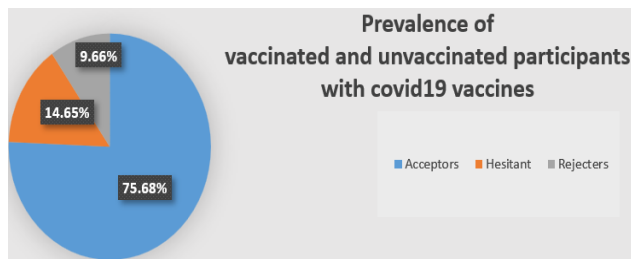| Table 1: The Basic Sample Characteristics		
Sample Characteristics		Number(%)
1-Age	18-20 yr.	25 (4.03%)
	21-30 yr.	258 (41.55%)
	31-40 yr.	186 (29.95%)
	41-50 yr.	96 (15.46%)
	51-60 yr.	49 (7.89%)
	61-70 yr.	6 (0.97%)
	71-80 yr.	1 (0.16%)
	81yr. and more	0 (0%)
2-Gender	Female	311 (50.08%)
	Male	310 (49.92%)
3-Education level	Diploma and below	150(24.2%)
	Bachelor and more	471(75.8%)
4-Members of health care providers	No	398 (64.09%)
	Yes	223 (35.91%)
5-Place of living	Basra	496 (79.87%)
	Other	125 (20.13%)
6-Marital status	Married	325 (52.33%)
	Unmarried	296 (47.67%)
7-Having chronic disease	yes	96 (15.46%)
	No/I do not know	525 (84.54%)

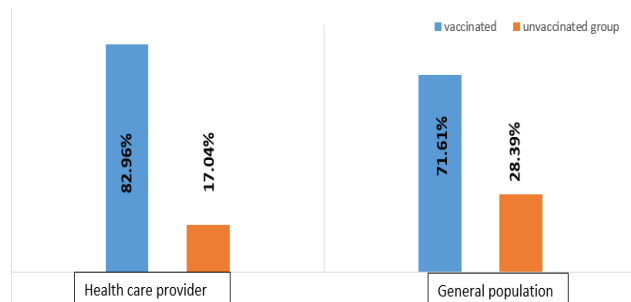*Figure (1): Prevalence of success vaccinated programs.*

Figure (2): Explain prevalence vaccinated and unvaccinated of the healthcare provider (HCP) and general participants.
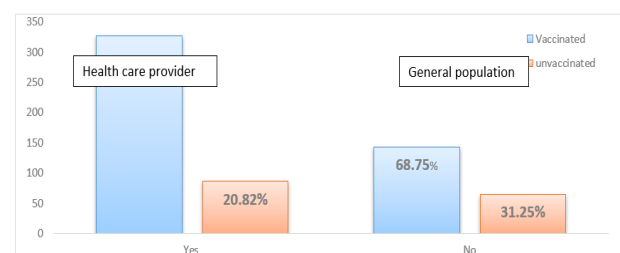

Figure (3): *Prevalence of vacinated and unvaccinated participants had one of the family members or friends died from covid19.*

5. Discussion

The searching thinkers of the world tried for discovery the fast vaccines against Covid19 infection in order to save life of human. However, the fast development of vaccines made a high percent of population either hesitant or rejecters to these vaccines especially in the Arab at Middle Eastern regions[4].

The communities around the world were had diverse acceptance rates like 90%China[6], 76.5%Canada7, 58% to 69% United States of America[8] and 55% Russia 9 .On the other hand, Arab countries[4] had acceptance rate like 34.7%Iraq ,29.4%KSA,18.5%Lebanon and 17.1%Jordan;Therefore,the prevalence of acceptance in Middle Eastern public4 shown 24.9% of the participant accepted to receive covid19 vaccines with 75.1% of participant were unvaccinated. Our study registered in clinical trials as first study performed in south of Iraq. The results of the current study obtained clearly higher rate of Covid19vaccines acceptance (75.68%) when compared with other Iraqi region studies like in AL-Hilla city10 or AL-Kufa[11] city, and other[12].

The differences in covid19 vaccines acceptance rates between our study and previous studies carried out in different Iraqi regions may be related to time of introduction of different studies, time of introduction of covid19 vaccines in the different area, anxiety from adverse effect of vaccines, availability of covid19 vaccines in different vaccination centers and Misinformation about covid19 vaccines as propagated in the Iraqi community at the beginning of appear. These might be had more influence on their opinion to accept and refuse or hesitancy toward these vaccines.

There are numerous factors that might affect on success vaccinated programs in the south of Iraq including:

1) Level of education where, the percent of vaccination of participants with bachelor level and more significantly higher than those with diploma level and below. This could be explained as the education level of participants has strong correlation toward compliance of covid19 vaccines.

2) Being members of health care providers where, the percent of vaccinated of participants who were members of health care provider significantly higher than those not membered of health care provider. This observations could be explained as the health care providers got large correct information about the risky of corona virus infection and important of vaccinations.

3)The environmental factors: In Basra, The percent of unvaccinated participants was significantly higher than those living in the other southern Iraqi cities and this could be due to difference in the number of participants between two regions. In addition, it may be belonged to difference in education programs focused toward covid19 vaccines among southern Iraqi cities.

4) Severity of covid19 sign and symptoms where, the percent of vaccinated participants who suffering sign and symptoms during Covid19 infection was significantly higher than those not suffering such symptoms. These results could be explained as increasing the severity of covid19 sign and symptoms associated with increasing in the fear from second covid19infection and may increase the rate of vaccines acceptance.

5) Having one or more of family members or friends died from covid19 .The percent of vaccinated participants who had one or more of family members or friends died from covid19 was significantly higher than those didn't have anyone family members or friends died. Again, this could be explained by increasing the fear from Covid19 infection.

Finally, as our study designed as cross-section study that may have some limitation which may include:

1. Some participants could not able to be received the questionnaire, the distribution of tool performed web based.

2. Sample size is very small with most response participant from Basra so, it's not considering of all south Iraqi community [12].

3. Short duration of survey.

4. There is some bias due to design of cross section study that get not representative sample (not a random sample)

6. Conclusion

From above results, the percent of covid19vaccines acceptance was higher than hesitancy and rejection. The higher rate of covid19 vaccines acceptance could be related to many factors that might effect on the success of vaccinated programs, including: level of education, place of living, had sign and symptoms of Covid19 infection have family members and/or friends died from covid19 and are members of the health care providers.

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