Barriers Associated with COVID-19 Vaccination Coverage Among Participants in a Religious Mass Gathering Event

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Abstract. Background: The high contagiousness of coronavirus and the significant impact of the disease on the health system of the various countries including Iraq, this made the need for vaccines essential to prevent and control of this epidemic.

Objective of the study: To assess the overall COVID19 vaccine uptake rate and its correlates (barriers) among participants in religious event.

Methodology of data collection:

This was a cross sectional study. A systematic random sample of (505) visitors during Imam Hussien visit, participants over 18 years of age were interviewed after obtaining their verbal consents using a pretest structured questionnaire which included demographic characteristics of and the presence of chronic diseases and the main factors related to reluctant for completion the vaccination schedule of COVID 19.

Results: More than one third of the participants (39%) did not receive at least one dose of COVID 19 vaccination which constituted a large unaccepted proportion susceptible to this infectious disease. The most important factor among others in up taking the vaccine was the coercion to be vaccinated. The main factors associated with the reluctant of taking up vaccine was predicted side effects, being busy with work and lack of time. In addition to, the lack accessibility to get the vaccine. Efforts should be paid to raise the level of public awareness to overcome these barriers in order to improve the coverage rate to the acceptable level to combat the disease inour society.

Keywords: COVID 19 · Vaccination coverage · Barriers · Arbaeen visitors · Iraq Babylon

1 Introduction

During the last two years, all nations worldwide were affected by a novel severe acute respiratory syndrome termed as coronavirus-2, COVID-19 which later became an international concern (Al-Mohaithef et al., 2021).It is unclear how the virus was originally spread to people (Tang et al., 2020, Andersen et al., 2020). The severity of the disease is made worse by medical comorbidities such hypertension, diabetes mellitus(Tsatsakis et al., 2020).

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The COVID-19 pandemic has medical, economic, and other global ramifications. Social distance, self-isolation, and travel restrictions have resulted in a reduced workforce across alleconomic sectors, resulting in the loss of many jobs. Schools have closed (Ahmad et al., 2020). Many challenges face the development and usage of a safe and effective SARS-CoV-2 vaccine, including formulation choice, approval of a large number of vaccine candidates, mass production, as well as cost and logistical considerations (Jorge et al., 2021).

Numerous vaccines have received approval from the World Health Organization (WHO) for use in COVID-19 pandemic emergencies (Machingaidze&Wiysong.,2021). Vaccine hesitancy is defined by as "delay in acceptance or refusal ofvaccination despite availability of vaccination services (MacDonald,2015). Public reluctance to get vaccines can significantly impede the proper administration of vaccines and the development of herd immunity (Dror et al., 2020). Vaccine fear is becoming a big barrier, as evidenced by the recent development of SARS-CoV 2 vaccines (Temsah et al., 2021 and French et al., 2020).

These vaccines can offer additional levels of protection against symptomatic and severe disease when given in two doses, three to four weeks apart (Baden et al., 2020). Misinformation about vaccines on social media utilizing the progress made overall in the fighting against infectious, and better governmental interventions are required in this regard (Yang et al.,2019).

Among vaccine reluctance is primarily caused by the inconvenience of vaccine pricing and affordability issues. (De Figueiredo et al., 2020).The main objective of this study was to investigate COVID- vaccination coverage rate among visitors in participating in a mass gathering event in Babylon governorate.

2 Subjects and Methods

This is a community based cross-sectional study that relied on personal interviews and used a pre-prepared questionnaire, which focused on demographic variables and the types of vaccine preferred by participants and proportion ofdefaulters among visitors who participated in Al Imam HussienArbaeen visits which is the most important mass gathering in Iraq. The setting of the study is the health care providing center directed by Al hilla University College, Babylon Iraq.

A systematic sampling technique was used to collect the sample, where data was collected through personal interviews to collect a sample of 505 people.

The statistical package of social sciences (SPSS) version 21 program was used to estimate the measures.

Ethical clearance include the followings: Approval of the research work by the scientific ethical research of Hilla University College. Period of data collection takes about three weeks (October,2022). Ethical Approval was obtained from the ethical research committee at Hilla University College. Informed verbal consents of patients who enrolled in this study were also taken after explaining the objective of the study. All personal data were kept secured and for every participant in the study.

Table 1. Distribution of the study sample by Demographic Characteristic

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Characteristic		**N(%)**
Gender	Male	245(48.5)
	Female	260(51.5)
	Total	505(100.0)
Age(years)	Mean(±SD)	38.13 (±14.99)
Residence	urban	217(43.0)
	Rural	288(57.0)
Age Group	≤20	57(11.3)
	21-30	138(27.3)
	31-40	87(17.2)
	41-50	115(22.8)
	51-60	69(13. 7)
	61-70	29(5.7)
	71-80	9(1.8)
	81-90	1(0.2)
Marital status	Married	345 (68.0)
	Single	101 (20.0)
	Divorced or widowed	59 (12)
Occupation	Private Job	184 (36)
	unemployed	50(10)
	employee	271(54)
Education level	illiterate	211(42)
	Able to read and write	66(13)
	Primary education	88(17)
	Intermediate school	47(9)
	Secondary school	45(9)
	College and above	48(10)
Monthly income	enough	234 (46)
	not enough	236(47)
	Enough andmore	35 (7)
Admissiontohospital onlyin case ofinjury	Yes	35(20.1)
	No	139(79.8)
Vaccinators	Yes	195(38.6)
	No	310(61.4)

(*continued*)

Table 1. (*continued*)

Numberof doses	single dose	53(26.9)
	2 doses	142(72.1)
	doses3	2(1.0)
Vaccine type	Chinese Sinopharm	64(32.5)
	English Asterzenca	3(1.5)
	American Pfizer	130(66.0)
Isthesecond dose ontime?	Yes	138(70.1)
	No	59(29.9)
Advise others to take the vaccine	Yes	246 (49)
	No	259(51.0)
Injuryto peoplewithin the same family	Yes	245(48.5)
	No	260(51.5)
Attendinga lecture on the importance of the vaccine	Yes	73(14.5)
	No	432(85.5)
Where did you get the vaccine information?	Health Center	130 (26)
	the radio	5(2.2)
	The television	45(9)
	Friends	13(3)
	Parents	32(14.5)
	Other sources	3(1.3)
	No exposure	277(47)

3 Results

Table 1 reveals that the most dominant age group is (21–30 years), females are slightly more frequent in this study, abouttwo thirds are married and most of the participants have not enough monthly income and most of them are employee. About 30% of the vaccinated receive only one dose. Most of the vaccinated received Pfozer vaccine.Regarding their attitudes 49% of them advice others to take the vaccine. Only 14.5% of the study sample were exposed to educational activities.

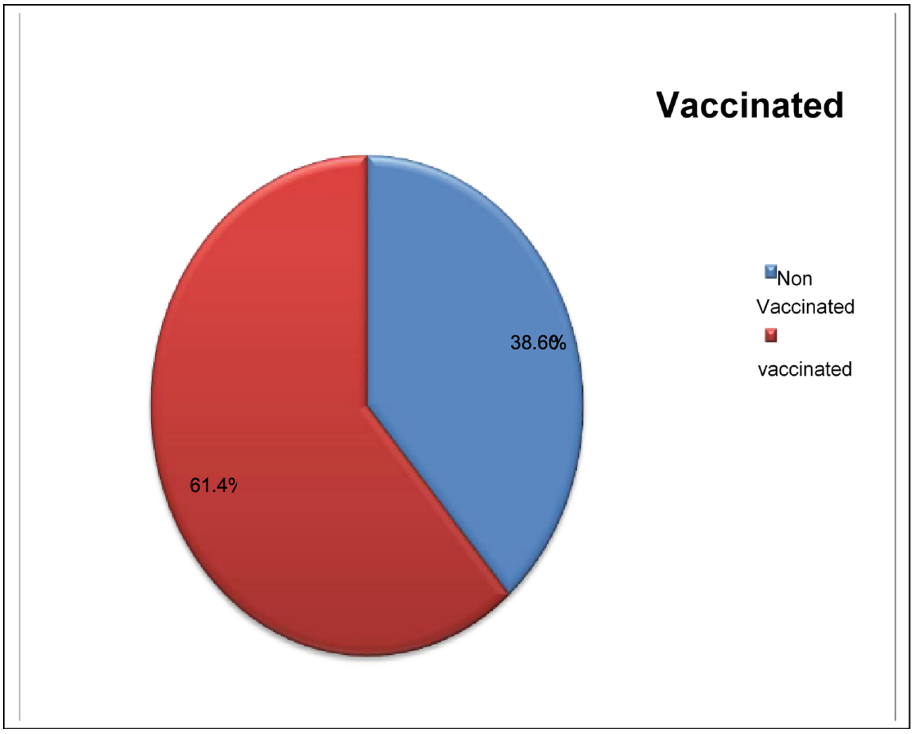

Fig. 1. Distribution of the study group by vaccination status

Figure 1 shows that 38.6% did not receive ant dose of vaccine.

Table 2 shows that the majority of non-vaccinated are males, have low level of education, low social class and living in rural areas.

Table 2. Distribution of non-vaccinated group by social demographic characteristics of (pollinators)

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Characteristic		**Non vaccinated (n=195)**
		N(%)
Age Group	**≤20**	**22(11.3)**
	21-30	**48(24.6)**
	31-40	**32(16.4)**
	41-50	**42(21.5)**
	51-60	**37(19.0)**
	61-70	**9(4.6)**
	71-80	**4(2.1)**
	81-90	**1(0.5)**
	Total	**195(100.0) Non vaccinated**
Gender	**Male**	**131(67)**
	Female	**64(33)**
	Total	**195(100.0) Non vaccinated**
Occupation	**Private Job**	**66(33.8)**
	unemployed	**88(45.1)**
	employee	**41(21.0)**
	Total	**195(100.0) Non vaccinated**
Level of Education	**Illiterate**	**64(32.8)**
	Able to read and write	**10(5.1)**
	Primary education	**47(24.1)**
	Inntermediate	**18(9.2)**
	Secondary	**28(14.4)**
	College and above	**28(14.4)**
	Total	**195(100.0) Non vaccinated**

(*continued*)

Table 2. (*continued*)

Place of Living	**Urban**	**89(45.6)**
	Rural	**106(54.4)**
	Total	**195(100.0) Non vaccinated**
Marital Status	**Married**	**139(71.3)**
	Single	**25(12.8)**
	Divorced	**.2(3.21)**
	widowed	**7(3.5)**
	Total	**195(100.0) Non vaccinated**
Monthly Income	**enough**	**85(43.6)**
	not enough	**86(44.1)**
	Enough and more	**24(12.3)**
	Total	**195(100.0) Non vaccinated**

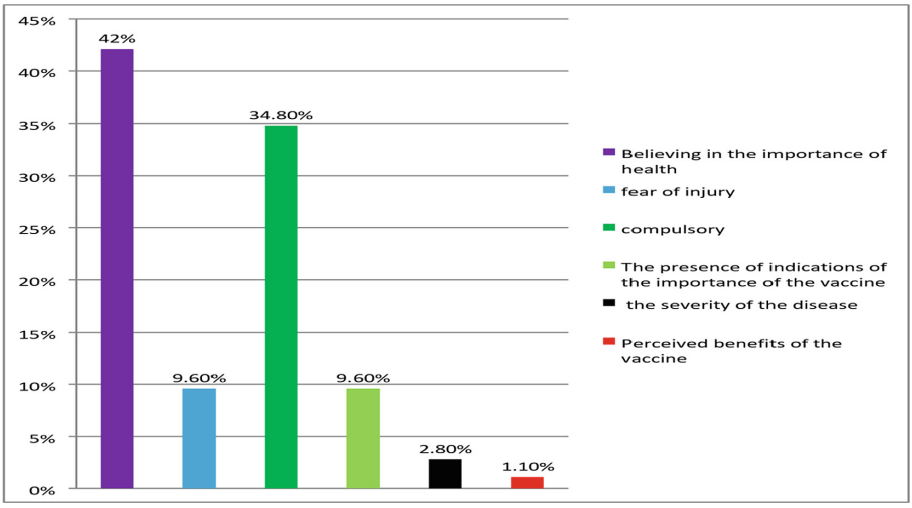

Fig. 2. Reasons for accepting the vaccine

Figure 2 shows that most common reasons for accepting vaccination are believing in its importance and the compulsory rules imposed by health or travel authorities.

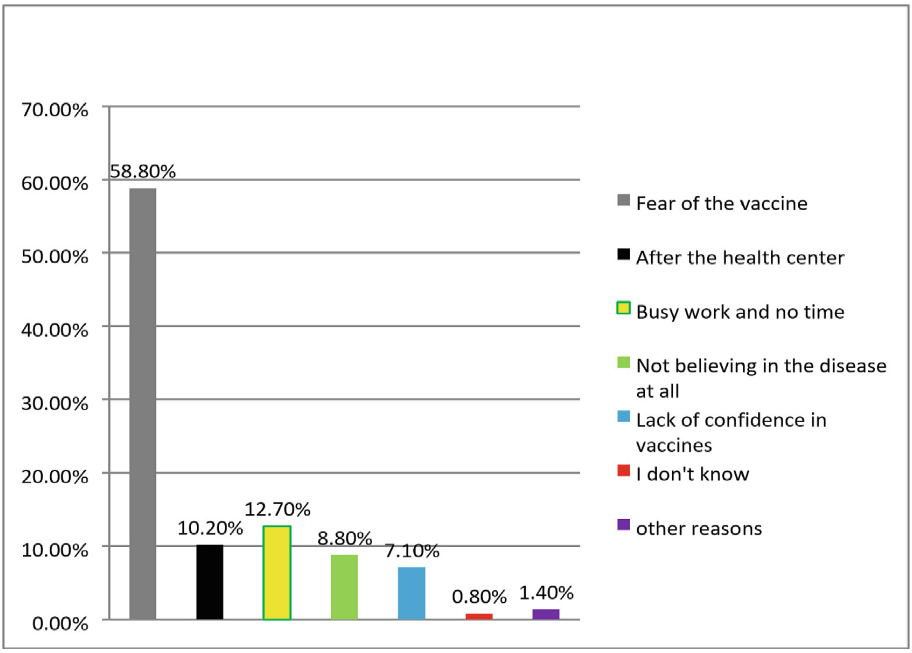

Fig. 3. Reasons for abstaining from vaccinate

Figure 3 reveals that the most common causes of not taken up vaccine are because of fear from the vaccine adverse effects (about 58.8%), followed by lack of time (12.7%).

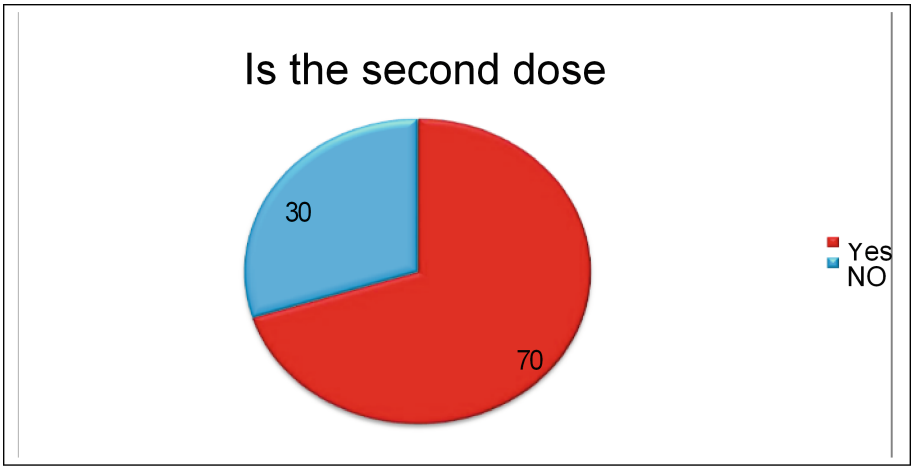

Fig. 4. Distribution of pollinators by receiving second dose of vaccine on time

A large proportion of those vaccinated committed to taking the second dose of the vaccine on time (Approximately 70%), as shown in Fig. 4.

4 Discussion

The COVID-19 pandemic has reached alarming proportions in Iraq, with thousands of new cases reported daily and hundreds of deaths reported weekly (Uctu R 2021). Iraqi government improved personal protective measures and announced for vaccines campaign. In this situation, vaccines are the most important tool to overcome the epidemic.

If the second dose is taken on time, the protection rate rises to about 70%This approach considered the effective way to combat COVID-19(Haidere et al., 2021).The most important results of this study revealed that more than one third of adults Arbaeen visitors did not receive even one single dose of Covid 19 vaccine of anytype, this condition may represent a considerable health risk as incomplete vaccination can trigger emergence of mutant strains (IPHA and IAPSM, 2021).

The current study found that younger age visitors and those with low levels of education as well as those with low socioeconomic status were more reluctant to receive the first dose of vaccine. This finding goes with some studies as that of Yoda et al., (2021) but contradicted with (Wang et al., 2020, Harapan et al., 2020).The most common reason mentioned by visitors that push them not to receive vaccines is the believein its side effects. Moreover, (Paul et al., 2021), many local and international studies reported no serious side effects of vaccination thatrequired urgent treatment or advanced medical care(Hasan et al2021, Abu- Halaweh S et al.2021; Abu-Hammad et al., 2021;Almufty et al 2021; Hatmalet al., 2021).

In fact all of the reported local or systemic side effects were trivial and within the expected range associated with vaccines.In addition, unemployment and low education share a larger proportion of the refuse clients which seems to be a common situation which discriminated by other researchers as (Albahri et al., 2021. Joshi et al., 2021).

Although there is an increase in vaccination rate with the availability of coronavirus vaccines in Iraq, the rate remains below the level required to achieve herd immunity in Iraqi society soon this may be due to many factors including the high score of COVID 19 vaccine misinformation (Al-Rubaye, 2022).

The high proportion of unvaccinated visitors may be related to poor health education activities conducted by primary health care services (Loskutova et al., 2020). In conclusionmore than two thirds of visitors in this mass gathering event were vaccinated with the first dose while one third of those who received the first dose did not receive the second dose. The most important risk factors for reluctant to take the vaccine were the fear of taking the vaccine followed by lack of time this finding is similar to the findings of other researchers (Albadr, 2022; Lazarus et al., 2021).A large percentage of participants reported that they were forced to get vaccinated as a condition to allow them to travel.

Recommendations:Efforts to improve people's perception of the vaccine and its safety by promotion of Public health education and health awareness campaigns.Simplification of the vaccination process by increasing the number of vaccination ports.Tracking of those who did not take the second dose in order to persuade them to comply with the complete vaccination process.

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