

COVID 19 VACCINATION RATE AMONG PHYSICIANS IN AL-EMAMAIN AL-KADHUMAIN MEDICAL CITY/ BAGHDAD

Nibras Alaa Hussain^{*1}, Methaq H alogaili² and Tamara Ala'a Hussein³

^{1,2}Family and Community Medicine Department, College of Medicine, Al-Nahrain University.

³Basic Sciences Department, College of Dentistry, Al-iraqia University.

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*Corresponding Author: Nibras Alaa Hussain

Family and Community Medicine Department, College of Medicine, Al-Nahrain University.

ABSTRACT

Background: The arrival of COVID-19 vaccinations ended health, industry, and economic misery, yet some countries are having trouble using them. Health care professionals, physicians, nurses, and medical students were prioritised for immunisation since they are at high risk for viral infection or transmission. **Objectives:** To estimate the intake rate of COVID19 vaccines, the most common side effects among the physicians and to find the relation of some sociodemographic factors with side effects occurrence. **Methods:** A cross-sectional study was conducted in Al-Imamain Al-Kadhmain Medical City. Data collected during May and June, 2021. A convenient sample of all physicians whom accept to be involved in this study were included in this study using a questionnaire prepared for this study. A level of significant was less than 0.05. **Results:** Out of 299 physicians, 247 (82.6%) took the vaccination, while 109 (44.1%) took Pfizer. The immunisation caused adverse effects in 158 (64%) doctors, including fever in 95 (60%) of them. 290 (97%) doctors agreed it was safe and 287 (96%) urged others to get the vaccination. Physician sex, married status, history of chronic conditions, and adverse response to drugs/other vaccinations were associated with side effects at p-value less than 0.05. **Conclusions:** The data was gathered early in vaccine introduction, yet vaccination uptake was good. Physicians used Pfizer vaccines most. Physician sociodemographic factors and side effects were significantly correlated.

KEYWORDS: COVID, vaccines, Physicians and side effects.

INTRODUCTION

COVID-19 is caused by a coronavirus that has spread rapidly around the world, resulting in a public health crisis and global threat.^[1] Despite control measures, this pandemic still necessitates the development of a vaccine, and mass vaccination has emerged as a preventive solution to combat the disease.^[2] Vaccines are of various types, with different efficacy and duration of action depending on the antigen design, vaccine administration route, and immunization method.^[3] Therefore, the introduction of a COVID-19 vaccine would mean a real end to the suffering of health, industry, tourism, and the economy, but the rollout of vaccination is actually facing challenges in some countries around the world.^[4] Priority groups for vaccination include healthcare workers, doctors, nurses, and medical students, as they are at a high risk of contracting the virus or spreading the disease to others.^[5] Therefore, it is very important to protect healthcare workers and the public through vaccination as it is a viable option for the future and ending the pandemic. On the other hand, vaccine hesitancy or

refusal remains a global challenge, and public trust in vaccination is declining globally due to people's political views, which plays an important role in their attitudes.^[6,7] Globally, COVID-19 has caused nearly 630 million cases, resulting in more than 6.5 million deaths^[8], with at least 6% of cases developing long-term COVID symptoms.^[9] This has placed a huge strain on health services and led to significant ongoing health problems.^[10] Vaccination against COVID-19 is currently underway worldwide, with more than 12.8 billion doses of vaccine administered.^[8] The benefits of vaccines in preventing cases are well known, including for vulnerable groups.^[11,12] However, side effects are generally mild and short-lived, although rare cases of more severe reactions have been reported.^[13] It is therefore important to adopt strategies to build trust in the wider population^[14] by communicating the benefits of COVID-19 vaccination at the population level and dispelling misinformation.^[15] The COVID-19 pandemic appears to have had a negative impact on living standards and put pressure on healthcare providers.^[16]

Many treatments have been tested in cases, but none have shown a clear therapeutic effect.^[17] Many preventive public health measures, such as quarantine, hand hygiene and cough etiquette, and physical isolation, have been introduced, although not very effective.^[18] To date, a variety of vaccines have been developed, some of which have been approved and others are still in clinical trials. In particular, vaccines from Pfizer-BioNTech, Sinopharm, Moderna, and Oxford/AstraZeneca have all received emergency use approval and are currently being used in several countries, including Iraq.^[19,20] Therefore, this study aimed to determine the vaccination rate and the occurrence of side effects and associated factors in a sample of Iraqi physicians.

OBJECTIVES: To estimate the intake rate of COVID19 vaccines, the most common side effects among the physicians at Al-Emamain Al-Kadhmain Medical City and to find the relation of some sociodemographic factors with developing side effects.

METHODS

A crosssectional research was conducted in the Al-Imamain Al-Kadhmain Medical City. Data gathered during the May and June period, 2021. A practical

sample of all doctors who participate in this research are included in this study via a questionnaire that was designed for this purpose. The questionnaire included information about the participants' demographics and questions about their history prior to the COVID-19 vaccine. Concerns regarding the development of side effects following the vaccine. Ultimately, they inquire about their personal thoughts regarding the vaccine's safety and effectiveness, if they recommend that others take it. Data was converted into a computerized database format. The statistical analysis was conducted using SPSS version 22, which is a computer program, and Microsoft Excel 2010, which is an office program, to complete the results of this study. A verbal agreement was made with the doctors before they responded to the questionnaire, additionally, a permission was granted by the Family and Community Department at Al-Nahrain Medical College. A significant level was less than 0.05.

RESULTS

A total sample of 299 physicians, the mean age of the sample was 32.4± 7.4 years with a range between (23-60) years. The Vaccine intake rate was 247(82.6%). see figure (1).

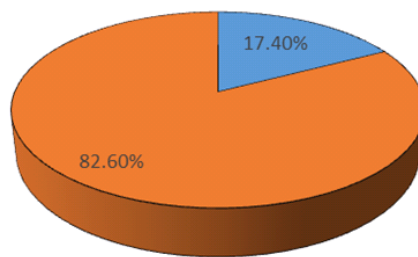


Figure 1: Rate of COVID19 Vaccine intake among Physicians at Al-Imamain Al-Kadhmain Medical City in 2021.

The physicians who are married was 173 (57.9%). Only 71 (23.7%) were specialist, 149 (49.8%) of them from Medicine department, 256 (85.6%) hadn't a private clinic, 261 (87.3%) hadn't chronic diseases and 211

(70.6%) of the physicians had history of previous COVID19 infection. According to kind of vaccine it found the percentage of whom took Pfizer vaccine was 109 (44.1%). see Figure 2.

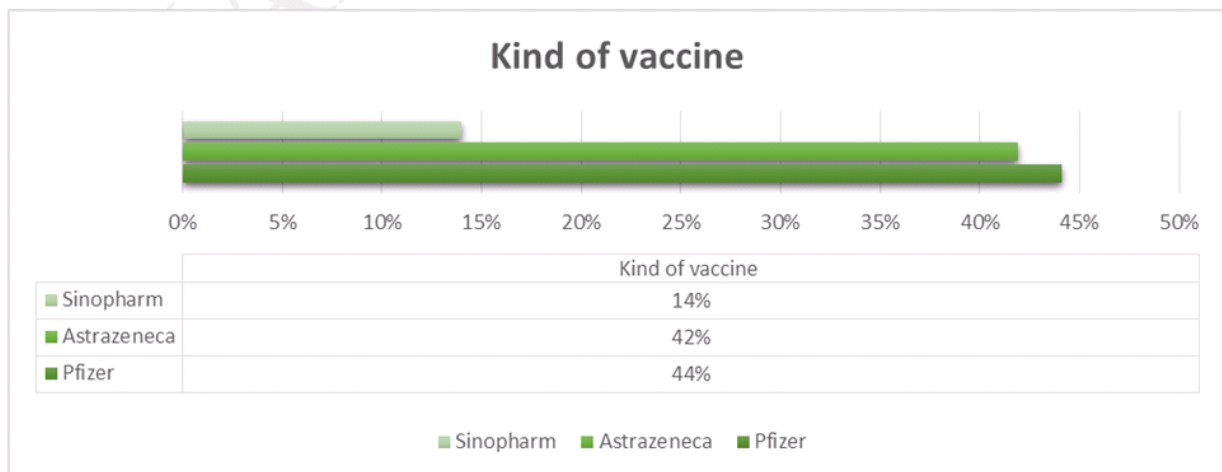


Figure 2: Distribution of the sample according to type of Vaccine.

211 (85.4%) of sample was taking the vaccine in hospital, 158 (64%) of physicians developed side effects after taking the vaccine, most common side effect was fever which developed in 95 (60%) of them and 145

(91.8%) of them disappeared their symptoms after 24 hr. Only 5 (2%) of physicians developed COVID infection after taking the vaccine. table 1.

Table 1: Distribution of the sample regarding COVID vaccine intake.

Variables	Responses	NO. (%)
1. Vaccine intake Site	Hospital	211 (85.4%)
	PHC	36 (14.6%)
2. Developing side effects	Yes	158 (64%)
	No	89 (36%)
3. Types of side effects	Fever	95 (60.1%)
	Arm soreness	80 (50.5%)
	Tiredness	73 (46.2%)
	Headache	44 (27.8%)
	Muscles/Joints pain	64 (40.5%)
	Others	10 (6.3%)
4. For how long side effects continue?	≤ 24 hr	13 (8.2%)
	> 24 hr	145 (91.8%)
5. Developing Corona after vaccination?	Yes	5 (2%)
	No	242 (98%)

Regarding physicians’ opinions on COVID vaccine, 297 (99.3%) of them thought that taking vaccine was effective in prevention of Corona infection, 290 (97%) thought its safe and 287 (96%) of them advised the other to take the vaccine.

chronic diseases and previous history of allergic reaction to drugs/other vaccines at p-value equal (0.04, 0.04, 0.02 and 0.0001 subsequently). While there were No significant association between side effects occurrence with previous history of COVID infection and the type of vaccine. See table2.

There were significant association between side effects occurrence and physicians’ sex, marital state, history of

Table 2: Significant association between side effect occurrence and some sociodemographic characteristics of the sample.

Variables	With side effects	No side effects	Total	Significant P-value
Sex				0.04
Male	91 (70%)	39 (30%)	130 (100%)	
Female	67 (57.3%)	50 (42.7%)	117 (100%)	
Marital state				0.04
Married	90 (59.2%)	62 (40.8%)	152 (100%)	
Unmarried	68 (71.6%)	27 (28.4%)	95 (100%)	
Hx. of chronic diseases				0.02
Yes	28 (82.4%)	6 (17.6%)	34 (100%)	
No	130 (61%)	83 (39%)	213 (100%)	
Hx. of Allergic reaction drug or other vaccine				0.0001
Yes	17 (16.5%)	86 (83.5%)	103 (100%)	
No	3 (2%)	141(98%)	144 (100%)	
Hx. of previous corona infection				0.6
Yes	111 (64.9%)	60 (35.1%)	171 (100%)	
No	47 (61.8%)	29 (38.2%)	76 (100%)	
Types of vaccine				0.1
Pfizer	68 (62.4%)	41 (37.6%)	109 (100%)	
AstraZeneca	72 (69.9%)	31 (30.1%)	103 (100%)	
Sino pharm	18 (51.4%)	17 (48.6%)	35 (100%)	

DISCUSSION

Vaccination plays an important role in developing herd immunity. The COVID vaccine has reduced the incidence of COVID-19 infection worldwide.^[21,22]

Doctors were the first to receive the vaccine in Iraq due to their work environment and contact with COVID-19 patients. In this study, the vaccination rate was 82.6%, which is slightly lower than a study conducted after our

study in Iraq from October 2021 to February 2022, which found that the vaccination rate among Iraqi health workers was 89.97%.^[23] This can be explained by the difference in timing, as this study was conducted shortly after the vaccine was introduced in Iraq and the previous study applied to all health workers, while this study only applied to doctors. The most commonly used vaccine type was the Pfizer vaccine (44.1%), which was the vaccine used in Iraq in the study conducted by Darweesh *et al.*^[23], in which Pfizer was the most commonly used vaccine type in Iraq, also because it is the most trusted vaccine. The incidence of adverse events was two-thirds (64%), which is lower than the level reported by Nancy Dreyer *et al.* A 2022 study in the United States^[24] found that 92.4% of vaccine recipients experienced side effects. This may be due to different types of vaccines and different populations, as the doctors in this sample knew how to deal with side effects. The most common side effect in this study was fever, and similar results were seen in Egypt in 2023.^[25] In this study, only 2% of vaccinated doctors were infected with the coronavirus, which is lower than in Ethiopia in 2021, where 14.8% of vaccinated health workers were infected with COVID-19^[26], which may be due to different locations and communities and during the incubation period, as they are not doctors, while our sample consisted of doctors who are well-versed in the disease. The majority of the sample (99.3%) believed that the vaccine was effective in preventing the coronavirus. This was even more true in Ethiopia, where only 44.6% believed it was effective.^[26] This may be due to differences in the nature, size, and knowledge level of the sample. There was a significant association between being male and the occurrence of side effects, which is consistent with a study conducted by Astawus Alemayehu *et al.* in 2022. It was conducted in Ethiopia. This may also occur in unmarried people because no one cares about them or they work longer hours than married people.^[27] Segni MT found a significant association between the presence of chronic diseases and the occurrence of side effects in Ethiopia.^[26] This usually happens because the presence of comorbidities or chronic diseases reduces immunity and increases people's fear of such vaccines. There was also a significant link between increased side effects of the new crown vaccine and a history of allergies, which is consistent with the views of Bian Sainan in 2021.^[28] However, consistent with a study in Saudi Arabia, there was no significant association between the occurrence of side effects, previous history of new crown virus infection, or vaccine type.^[29]

CONCLUSION

The rate of physicians' intake of the COVID 19 vaccine was beneficial as the time of data collection was during the early stages of the vaccine's administration in Iraq, the frequency of adverse effects was also lower than in other countries. The frequency of side effects was significantly higher in patients who were unmarried, men, and had a history of chronic diseases or previous allergy to drugs or vaccines.

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Conflict of interest: No conflicts.

REFERENCES

1. Behera BC, Mishra RR, Thatoi H. Recent biotechnological tools for diagnosis of corona virus disease: A review. *Biotechnol Prog*, 2021; 37(1): e3078. <http://doi.org/10.1002/btpr.3078> PMID:32902193.
2. Kumar VM, Pandi-Perumal SR, Trakht I, Thyagarajan SP. Strategy for COVID-19 vaccination in India: The country with the second highest population and number of cases. *NPJ Vaccines*, 2021; 6(1): 60.
3. Park KS, Sun X, Aikins ME, Moon JJ. Non-viral COVID-19 vaccine delivery systems. *Adv Drug Deliv Rev*; 2021; 169: 137-51. <http://doi.org/10.1016/j.addr.2020.12.008> PMID: 33340620.
4. World Health Organization. Ten Threats to Global Health in 2019. Geneva: World Health Organization, 2019; Available from: <https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019> [Last accessed on 2021 Mar 31].
5. Yin Q, Sun Z, Liu T, Ni X, Deng X, Jia Y, *et al.* Posttraumatic stress symptoms of health care workers during the corona virus disease, 2019. *Clin Psychol Psychother*, 2020; 27(3): 384-95. <http://doi.org/10.1002/cpp.2477> PMID: 32415733.
6. Kwok KO, Li KK, Wei WI, Tang A, Wong SY, Lee SS. Editor's Choice: Influenza vaccine uptake, COVID-19 vaccination intention and vaccine hesitancy among nurses: A survey. *Int J Nurs Stud*, 2021; 114: 103854. <http://doi.org/10.1016/j.ijnurstu.2020.103854> PMID: 33326864.
7. COCONEL Group. A future vaccination campaign against COVID-19 at risk of vaccine hesitancy and politicisation. *Lancet Infect Dis*; 2020; 20(7): 769-70. [http://doi.org/10.1016/S1473-3099\(20\)30426-6](http://doi.org/10.1016/S1473-3099(20)30426-6) PMID: 32445713.
8. WHO Coronavirus (COVID-19) Dashboard. Available online: <https://covid19.who.int> (accessed on 9 November 2022).
9. Persistent symptoms following SARS-CoV-2 infection in a random community sample of 508,707 people. *medRxiv*, 2021; Available online: <https://www.medrxiv.org/content/10.1101/2021.06.28.21259452v1>. (Accessed on 21 November 2022).
10. Douglas, M.; Katikireddi, S.V.; Taulbut, M.; McKee, M.; McCartney, G. Mitigating the Wider Health Effects of COVID-19 Pandemic Response. *BMJ*; 2020; 369: m1557. [Google Scholar] [CrossRef] [PubMed].

11. Thomas, S.J.; Moreira, E.D.; Kitchin, N.; Absalon, J.; Gurtman, A.; Lockhart, S.; Perez, J.L.; Pérez Marc, G.; Polack, F.P.; Zerbini, C.; et al. Safety and Efficacy of the BNT162b2 mRNA COVID-19 Vaccine through 6 Months. *New Engl. J. Med*; 2021, 385: 1761–1773. [Google Scholar] [CrossRef] [PubMed].
12. Cavanna, L.; Citterio, C.; Toscani, I. COVID-19 Vaccines in Cancer Patients. Seropositivity and Safety. *Systematic Review and Meta-Analysis. Vaccines*, 2021; 9: 1048. [Google Scholar] [CrossRef].
13. Kaur, R.J.; Dutta, S.; Bhardwaj, P.; Charan, J.; Dhingra, S.; Mitra, P.; Singh, K.; Yadav, D.; Sharma, P.; Misra, S. Adverse Events Reported From COVID-19 Vaccine Trials: A Systematic Review. *Indian J. Clin. Biochem*, 2021; 36: 427. [Google Scholar] [CrossRef].
14. Opel, D.J.; Salmon, D.A.; Marcuse, E.K. Building Trust to Achieve Confidence in COVID-19 Vaccines. *JAMA Netw. Open*, 2020; 3: e2025672. [Google Scholar] [CrossRef].
15. Measuring the impact of COVID-19 Vaccine Misinformation on Vaccination Intent in the UK and USA. *Nature Human Behaviour*. Available online: <https://www.nature.com/articles/s41562-021-01056-1> (accessed on 21 November 2022).
16. Bonyan FA, Shareef LG, Al-waily A, et al.: COVID-19 clinical characteristics and outcomes in 60 hospitalized Iraqi patients-Case series. *Med. Sci*; 2020; 2251–2258.
17. Shareef LG, Abdulwahab SM: Trends in covid-19 therapeutic modalities: A narrative literature. *Eur. J. Pharm. Med. Res*; 2020; 7: 757–767.
18. Looi MK: Covid-19: Is a second wave hitting Europe?. *BMJ*; 2020 Oct 28; 371. Publisher Full Text
19. Shareef LG: COVID-19 vaccine coverage and the necessity of its urgent development towards Omicron the new SARS CoV-2 B. 1.1. 529 variant. *GSC Biological and Pharmaceutical Sciences*, 2021; 17(3): 058–060. Publisher Full Text.
20. Gasmı A, Srinath S, Dadar M, et al.: A global survey in the developmental landscape of possible vaccination strategies for COVID-19. *Clin. Immunol*, 2022 Feb 24; 108958. PubMed Abstract | Publisher Full Text.
21. Aghamirza Moghim Aliabadi H, Eivazzadeh-Keihan R, Beig Parikhani A, Fattahi Mehraban S, Maleki A, Fereshteh S, et al. COVID-19: A systematic review and update on prevention, diagnosis, and treatment. *MedComm*, 2022; 3(1): e115. doi: 10.1002/mco2.115 [PMC free article] [PubMed] [CrossRef] [Google Scholar].
22. Speiser DE, Bachmann MF. COVID-19: Mechanisms of vaccination and immunity. *Vaccines*, 2020; 8(3): 404. [PMC free article] [PubMed] [Google Scholar].
23. Omeed Darweesh, Nasir Khatab, Ramiar Kheder, Thulfiqar Mohammed, Tola Faraj, Sabah Ali, Muath Ameen, Azad Kamal-Aldin, Mohammed Alswes, Naif Al-Jomah. Assessment of COVID-19 vaccination among healthcare workers in Iraq; adverse effects and hesitancy. *PLoS One*, 2022; 17(11): e0274526. Published online 2022 Nov 18. doi: 10.1371/journal.pone.0274526.
24. Nancy Dreyer, Matthew W. Reynolds, Lisa Albert, Emma Brinkley, Tom Kwon, Christina Mack, and Stephen Toovey. How frequent are acute reactions to COVID-19 vaccination and who is at risk?. *Vaccine*, 2022 Mar 15; 40(12): 1904–1912. Published online 2022 Feb 9. doi: 10.1016/j.vaccine.2021.12.072.
25. Aliaie A. R., Mohamed Hussein, Maiada K. Hashem, Mohammed G. Azizeldine, and Ahmad M. Shaddad. Prevalence and characteristics of COVID-19 vaccine breakthrough infection in Upper Egypt. *Egypt J Bronchol*, 2023; 17(1): 21. Published online 2023 Apr 21. doi: 10.1186/s43168-023-00196-4.
26. Segni M.T, Demissie H.F, Adem M.K, Geleto A.K, Kelkile M.W, Sori B.K, Heyi M.L, Iticha D.G, Bejiga G. Set al. Post COVID-19 vaccination side effects and associated factors among vaccinated health care providers in Oromia region, Ethiopia in 2021. *PLoS One*, 2022; 17(12): e0278334. Published online 2022 Dec 8. doi: 10.1371/journal.pone.0278334.
27. Astawus Alemayehu, Abebaw Demissie, Mohammed Yusuf, Yasin Abdullahi, Remzia Abdulwehab, Lemessa Oljira and Dereje Feleke COVID-19 vaccine side effect: age and gender disparity in adverse effects following the first dose of AstraZeneca COVID-19 vaccine among the vaccinated population in Eastern Ethiopia: a community-based study. *SAGE Open Med*; 2022; 10: 20503121221108616. Published online, 2022 Jul 6. doi: 10.1177/20503121221108616
28. Sainan Bian, Lisha Li, Zixi Wang, Le Cui, Yingyang Xu, Kai Guan, and Bin Zhao. Allergic Reactions After the Administration of COVID-19 Vaccines. *Front Public Health*, 2022; 10: 878081. Published online 2022 May 17. doi: 10.3389/fpubh.2022.878081.
29. Mohammed Y Alessa, Fatimah J Aledili, Ahmad A Alnasser, Sarah S Aldharman, Abdulaziz M Al Dehailan, Hanan O Abuseer, Ali A Almohammed saleh, Hawra A Alsalem, Hassan M Alsadiq, and Amal S Alsultan. The Side Effects of COVID-19 Vaccines and Its Association With ABO Blood Type Among the General Surgeons in Saudi Arabia. *Cureus*, 2022 Mar; 14(3): e23628. Published online 2022 Mar 29. doi: 10.7759/cureus.23628.