



## Covid-19 Vaccine acceptance or refusal among the residents of Makkah Al Mukarramah

Khalid I Alsharif, Mazen A Misha, Abdullaziz S Imam, Ahmad A Alharbi, Ahmad A Alsolami, Mamdooh S Alateeq, Mohammed A Nasif, Ghaday A Zaylaee, Hussain H Alkaf, Embarak I Alsharif, Abdullah M Alahmadi, Yasser K Alghamdi, Faisal J Allogmani, Alaa O Alsayed, Faris J Alsaeedi, Fahad M Almazroeye, Abdulrahman M Alrezqi, Abdullatif D Alharbi, Saeed M Almuntasheri, Ahmad M Almahmadi, Khalid M Alqarni, Adil F Almatrafi, Ali M Almuntasheri, Amer N Albarakati, Majed J Alsaeedi, Talaat A Munshi, Jubeer K Alhudali, Yaya A Allugmani, Khalaf T Alsolami, Saad B Alsaedi, Addel M Ashei

Ministry of Health, Makkah, Saudi Arabia

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#### Corresponding Author

Khalid I Alsharif  
Email: [alsharif.tqm@gmail.com](mailto:alsharif.tqm@gmail.com)

### ABSTRACT

The study aims to assess the acceptance or refusal to take the Novel Coronavirus Vaccine by the residence of Makkah city. The study was conducted online where the researchers made an electronic questionnaire distributed among the population, considering not to include those who have any ties with health sectors, pharmaceuticals, vaccine companies, or Local and international Food and Drug authorities. The researcher and his colleagues distributed the electronic questionnaire by phone, online contacts, and social networks. More than 1000 respondents (random sample) aged 16 and above from different backgrounds and neighborhoods were contacted within Makkah, and 450 responses were obtained due to the difficulties of conducting in-person interviews during social distance regulations. The responses were taken from those who had not previously been vaccinated.

## Introduction

As of October 22 2021, nearly 242 million people had been infected, while 4.9 million had died worldwide (World Health Organization, 2021).

The COVID-19 pandemic in Saudi Arabia is part of the worldwide pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case in the kingdom was confirmed by the Ministry of Health on 2 March 2020 (Saudi first report, 2020) and in the following months, the kingdom held the highest number of confirmed cases in the Arab states of the Persian Gulf (Covid 19 Dashboard, 2020).

A safe and effective vaccine is a critical tool to control the COVID-19 pandemic. As of 25 June 2021, 23 vaccines had advanced to Stage 3 clinical trials<sup>1</sup> and more than a dozen had been approved in multiple countries (COVID-19 Vaccine Tracker 2021).

Several studies have investigated willingness to take a potential COVID-19 vaccine in high-income countries ((Malik et al., 2020; Kreps et al., 2020), however, little is known about Saudi Arabia.

Understanding the drivers of COVID-19 vaccine acceptance is of global concern, because a lag in vaccination in any country may result in the emergence and spread of new variants that can overcome immunity conferred by vaccines and prior disease (Lazarus et al., 2021).

Since the beginning of the pandemic, the Saudi government has taken a proactive stance in mitigating the spread of the virus; however, these efforts on their own are not effective, and the speedy rollout of a COVID-19 vaccine remains a critical component of any country's strategy in putting an end to the pandemic (Jayasooriya et al., 2020). However, widespread acceptance of COVID-19 vaccines is crucial for achieving sufficient immunization coverage to end the global pandemic.

Thus, there is a need to estimate the acceptance or refusal of taking Covid-19 vaccine in Saudi Arabia. Given the paucity of data regarding vaccine acceptance among residence of Makkah, we conducted a survey across people other than healthcare institutions to measure their willingness to accept and schedule receiving the first dose of a COVID-19 vaccine, as well as to understand the reasons underlying vaccine hesitancy or refusal.

## Material and Methods

The research was conducted in the Makkah city of Saudi Arabia from January 2021 to June 2021. The researchers used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon, such as the acceptance of the residents of Makkah to take the coronavirus vaccine and know their responses towards the vaccine. It includes individuals, bodies, institutions, governments, and states and a description of the past, as is the qualitative description that describes the phenomenon, describing the effects of its absence and the means used, and the extent of its impact on the life of the individual and society, and the analysis is valuable variables in growth and creation.

As for the quantitative expression, it gives us a numerical description that shows the amount of the phenomenon through the method of social survey, taking a representative sample of the population under study, and this type of social survey is concerned with studying social phenomena such as population, traditions, economic, cultural and political attitudes, guardians or analyses of the work environment. In addition, variables studied were the health of the individual, society, and consumer, the prevalence of diseases and their relationship to demographic variables such as age, gender, nationality, marital status, and occupation and how these factors affect them (Alserahy et al., 2008) to perform statistical analysis such as determining averages and descriptive statistics Microsoft Excel Office Group 2010 was used to analyse the data.

## Results and Discussion

The questionnaire is a convenient and essential tool for data collection. However, the researchers could not conduct personal interviews with the participants answering the electronic questionnaire due to social distancing regulations at the time of study conduction to prevent infection between the participants and researchers and vice versa. Also, it was sufficient to answer the questionnaire electronically only, as the questionnaire consisted of fourteen questions, thirteen closed and one open question. The online approach was also used to generate valid samples in similar studies in KSA and other countries (Kadasah et al., 2020).

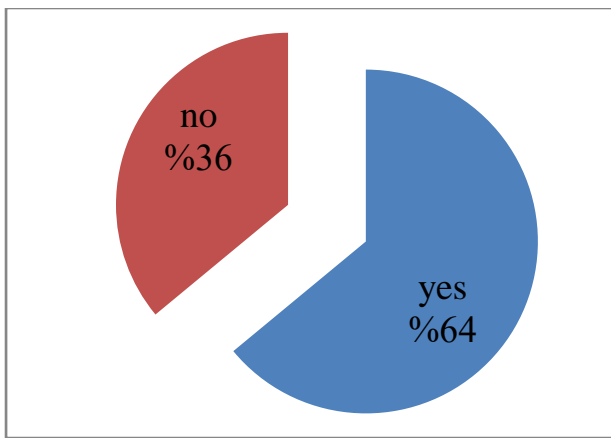
The first question asked if a person works in the field of education and deals with students, and the

second was asking whether the person works in the health field or has a relationship with pharmaceutical and vaccine companies or the Food and Drug Authority. The third question, asked if he/she has been infected with the COVID-19, the fourth question asks if any of your family members have been infected with COVID-19, The fifth asked about whether he/she suffer from chronic diseases and requires him/her to take medications periodically, the sixth question was "How do you rate your health at the moment?", the seventh question was "are you willing to take the COVID-19 vaccine?", the eighth question was "Do you have any of your relatives or family members who have taken the vaccine?", and the ninth question, if he/she is allowed to travel abroad with the certificate vaccination. The tenth question was "Is any of your relatives working in the health or media sector, or relationship with pharmaceutical companies or the Food and Drug Authority. Question eleven, "Are you obligated to take the COVID-19 vaccine. Question twelfth was, " Will you take vaccine if it is manufactured locally?". Question thirteen, "do you agree on taking the COVID-19 vaccine , if this vaccine was manufactured abroad?". The fourteenth question was, "if you were infected with COVID-19, would you take the vaccine?"

As for the ages of the participants in the electronic questionnaire, we found that the age of the participants was 16 years and over. Of which 49.6% were females, and 50.4% were males, while in terms of nationality, 96.1% were Saudis (males and females), while 3.9% were non-Saudis. In terms of marital status, 77.8% were married, 14.8% were single, 5% divorced, and 2.4% widowed. Considering the educational status, 65.5% of the respondents were university graduates, 21.6% held a high school diploma, 12.1% held a doctorate or master's degree, 8.0% had primary certificate, while no one had with read or write. Based on the professional situation, 58.6% were government employees, 20.3% were housewives, 12% employees in the private sector, 6% students, 1% were retired, 2% self-employed and 0.1% did other jobs. When the participants were asked about the material income, we found 25.7% for those with less than 5000 riyals (1333USD), 28% for those whose material income ranged from 5001 to 10,000 riyals (1333 to 2666USD), and 46.3% of their income was more than 10001 riyals (2666 USD). Among the residence of the participants, 100% of them were residents of the city of Makkah. While asked if they had affected by COVID-19, 81.9% answered "no" and 18.1% answered "yes". When asked if any of

their family members had affected with the novel coronavirus, 47% answered “yes” and 53% said “no”. While asked whether he/she suffered from chronic diseases and was required to take medications periodically, 17.2% answered yes, i.e. takes medications, and 82.8% answered no. When asked to rate his current health, we found 44% excellent, 22.5% good, 32.9% very good, 2.2% acceptable, and 0% very poor. And whether or not he was taking the vaccine, 64% answered yes, and 36% responded no.

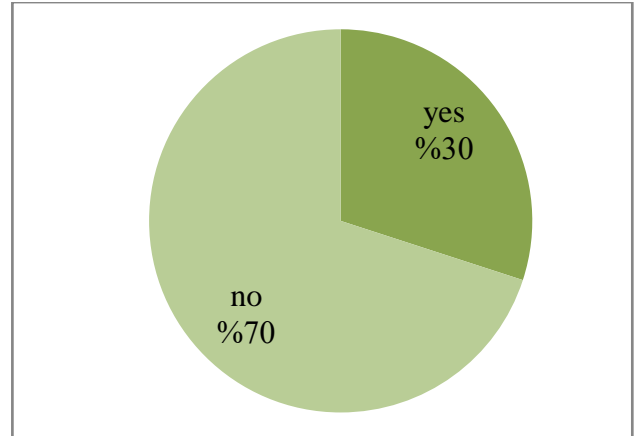
When asking any of his relatives or a family member had taken the vaccine, 45.9% answered yes and 54.1% answered no (Figure 1).



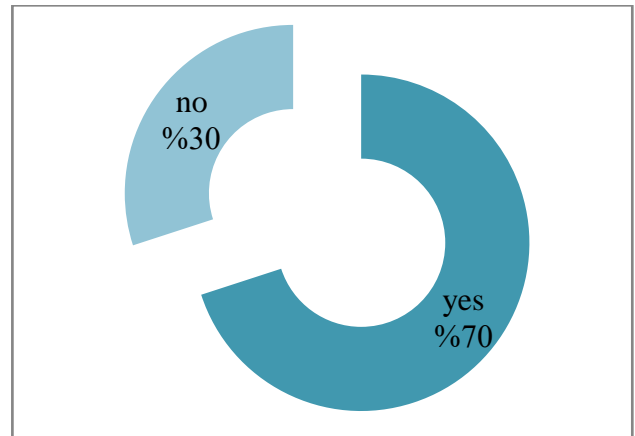
**Figure 1:** Percentage of the population of Makkah's whether taken coronavirus vaccine or not.

Whether they allowed to travel abroad and with a certificate of vaccination, 73% answered yes and 27% no. Whether one of his relatives works in the health or media field or has a relationship with pharmaceutical companies or the Food and Drug Authority to get correct information about the vaccine quickly, 60% answered yes, and they have relatives, and they have a relationship, and 40% said no. Whether vaccination is mandatory, 30% answered yes, and 70% said no (Figure 2).

Among the participants 70% percent answered yes, and 30% percent answered no when asking if the vaccine in produced locally (Figure 3). On the other hand 59.6% answered yes, and 40.4% answered no when asking if the vaccine imported from outside country.



**Figure 2:** Percentage of those who agree to take the compulsory vaccine



**Figure 3:** The rate of acceptance of the vaccine by the participants, if it was manufactured locally

## Conclusion

The Saudi Government has made tremendous and commendable efforts to facilitate and promote the covid-19 vaccination awareness and process.

Informational bulletins spread via the Internet, electronic newspapers, text messages, billboards, TV shows, and many other platforms along with the information provided to callers on covid-19 hotline 937, answering their inquiries concerning the safety of the vaccine and dealing with accompanying symptoms and the measures they should follow, All had helped to spread more awareness about the safety and benefits of taking the vaccine, and to disregard rumors and false information spread in unreliable sources.

Vaccination centers are enormously located in health and other sectors such as Universities, Medical cities, airports, shopping, and entertainment

centers. This facilitates reaching the most significant possible vaccination rates exceeding 70% as soon as possible to restore the norm known before the covid-19 crises.

Smartphone Applications developed by the Ministry of Health, such as Tawakalna and Anaah, have helped immensely in booking appointments with ease and receive the vaccination at the nearest vaccination centers in every city in the Kingdom.

Through this study, we found that majority of the participants were well informed and aware of the benefits of the novel coronavirus vaccine and were comfortable complying sincerely with all measures taken by the MOH and other Government sectors.

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