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Mini Review

# COVID-19 Vaccination in Saudi Arabia: A Mini Literature Review

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## Abstract

**Background:** A vaccine against the COVID-19 virus is the answer to halting the epidemic. Parents have the final say on whether or not to vaccinate their children because they are ultimately responsible for them. The original search yielded 180 publications, but only 70 were truly relevant. Following the conclusion of the review, ten studies were published, the results of which are listed below. Four studies focused on parents' attitudes and knowledge about vaccination against COVID-19 in Saudi Arabia, and six studies focused on vaccination against COVID-19 in general in Saudi Arabia. **Aim:** The review's goal is to understand the Saudi community's point of view, perception, and attitude toward Covid-19 vaccination based on recent publications. **Method:** PubMed, ScienceDirect, Google Scholar, and Research Gate were used to conduct a review of qualitative research. The study compiles data on COVID-19 immunization in Saudi Arabia from ten different sources. **Summary/Conclusion:** Many parents around the world are hesitant to administer the COVID-19 vaccine to their children due to concerns about its efficacy, safety, and necessity. In Saudi Arabia, however, the majority of parents were willing to vaccinate their children against COVID-19.

**Keywords**: Saudi Arabia; Vaccination; COVID-19 Pandemic; Article review; Caregiver.

## Introduction

Since its formal identification in Wuhan, China last December 2019, Covid-19 has spread to 213 countries and territories resulting in over six hundred million cases and nearly six and a half million deaths as of the writing of this article (www.worldometers.info) [1]. Thus, the world consequences of the COVID-19 outbreak continued to be at the very least concerning until this day despite improving general conditions globally. Since then, a number of studies conducted in Saudi Arabia have linked COVID-19 to negative mental and physical health effects due to various reasons but mainly were found to be connected with the isolation protocols set to control its spread [2].

Subsequent to the outbreak, the number of COVID-19-related hospitalizations in Saudi Arabia has increased significantly especially during the height of its spread during the year 2020. Significant to the pandemic and its management is the required vaccination drive presented to all governments just like in Saudi Arabia to promote the Covid-19 vaccination. There was a worldwide decline in childhood vaccination rates during the COVID-19 pandemic, and Saudi Arabia had a negative outcome on child vaccination timeliness due to the fear of being infected with COVID-19 [3,4].

Despite the fact that COVID-19 vaccination is required because preventative measures alone will not stop the virus's spread. The development of an effective vaccine is critical to reducing the personal and societal risks of COVID-19 infection in children. Vaccination will increase life expectancy by lowering the prevalence, morbidity, and mortality of Covid-19 infection.

Therefore, a herd immunity is required to limit COVID-19 embodiment, and childhood vaccines play a critical role in achieving this [5]. However, a vaccine that is both effective and safe will not be enough to cease the pandemic. At present, vaccination reluctance or refusal despite the availability of

the COVID-19 vaccine threatens to reverse progress made in combating COVID-19 diseases [6].

Today, high levels of public acceptance of vaccines are also observed mainly for the adults focused on the 1st and 2nd doses as required except for the booster dose. Effective vaccine campaigns during pandemics have been found to be dependent on a number of factors which include: (1) an individual's risk perception of the vaccine's harm or adverse effects, (2) a healthcare professional's positive recommendation of the vaccine, and (3) knowledge of the disease and the vaccine development process.

## Methodology

***Database Searching***: Qualitative research review was carried out by using the internet search engines PubMed, ScienceDirect, Google Scholar, and Research Gate. All relevant information about COVID-19 vaccination in Saudi Arabia is included in the studies using the search terms Covid-19 vaccination, and Saudi Arabia.

***Inclusion and Exclusion Criteria:*** *A*ll studies used in this review were conducted in English and published between the years 2020 and 2022. Additionally, the authors must be Saudi and/or the topic must be about the Kingdom and its citizens and residents.

***Study Characteristics:*** Authenticity, dependability, and validity are not concerns in the current study's literature assessment because it relies solely on publications published in peer-reviewed journals, the academic gold standard.

***Aim of Review:*** The primary goal of this review is to better understand COVID-19 vaccination in Saudi Arabia. Furthermore, the study determined various patents' attitudes and knowledge regarding COVID-19 vaccination in Saudi Arabia.

### Review Discussion

#### *Saudi parents' views on the COVID-19 vaccine*

The coronavirus disease pandemic of 2019 (COVID-19) poses a global public health threat. This unexpected event has caused havoc all over the world. Thus, developing an effective and safe vaccine for all populations, including children, is an effective strategy for reducing COVID-19 morbidity and mortality and increasing population immunity [7]. According to Ennaceur & Al-Mohaithef (2022), parents have a different perception of the probability of coronavirus transmission and related health problems, as well as the efficacy of the vaccine and possible side effects [8]. These findings could help inform public health awareness campaigns and health promotion programs that target children and emphasize good parenting styles.

In addition, Baghdadi et al. (2022) revealed that caregivers' health-information seeking behavior was oriented toward social media networking throughout the pandemic, social media, particularly YouTube and Facebook, influenced parents' decisions about their children's immunizations, primarily in Saudi Arabia [9]. The assessment outcomes shed light on the best ways to reach the Saudi public and launch a successful awareness campaign by identifying the most popular and powerful information resources. Furthermore, in a study conducted by Samannodi et al. (2021), 63.9% of parents said they would vaccinate their children if the option was available [10]. Almost 40% of these parents have expressed a desire for their child to receive the COVID-19 vaccine as soon as possible, and about one-fourth (23.9%) of parents said they would vaccinate their children against influenza this season [11]. Although a lack of knowledge about the vaccine's efficacy in children was the most frequently cited reason for reluctance, the availability of sufficient information about the COVID-19 vaccine was the most widely accepted reason for getting it. A large family size (five or more children) was associated with a lower probability of vaccination acceptance in one study (OR: 0.42 (95% CI: 0.21-0.86), p.05. This observation was so relevant that most Saudi family has average number of family members per household, with some even higher. Additionally, Temsah et al., (2021) discovered that a large percentage of parents are concerned about the COVID-19 vaccine's efficacy, safety, and whether it is necessary for their children. Overall, however, more parents, primarily in Saudi Arabia, were willing to vaccinate their children against COVID-19 [12].

#### *People's willingness to be vaccinated*

Studies have reached conflicting conclusions about the benefits of vaccination and other forms of immunization. Magadmi & Kamel (2021) discovered that 44.7% of 3101 individuals were willing to receive the COVID-19 immunization if it were made available, while 55.3% were hesitant [13]. Those who were younger and male and had been vaccinated against the seasonal flu were more open to the idea. Concerns about potential side effects emerged as the most significant barrier to vaccine adoption. Furthermore, if additional studies show that the vaccine is safe and effective, the majority of vaccine refusers may take it, and the data may be used to organize immunization campaigns in the meantime. Narapureddy et al. (2021) on the other hand, received 796 responses for their investigation [14]. After removing the forms with missing information, 782 submissions remained (98.2 percent). The participants were chosen at random and range in age from 18 to 80. COVID-19 vaccinations were known to nearly 723 (92%) of the participants. Among those polled, 370 (47%) preferred vaccines manufactured in the United States, while 217 (28%), in second place, preferred vaccines manufactured in Saudi Arabia. Moreover, there were 259 people (33.1%) who refused the immunization while 386 (50%) of the 782 people polled believed the COVID-19 vaccine would be effective in preventing the disease. However, there were 442,071 COVID-19 cases in the country, resulting in 7264 deaths (1.6%). It is too early to tell whether the vaccination reduced overall incidence and mortality.

The Kingdom of Saudi Arabia is working hard to ensure that all of its citizens are immunized, and has implemented measures such as requiring proof of immunization before entering government buildings and public facilities. According to Alshahrani et al. (2021) research, roughly 64 percent are willing to take the vaccination, while 18.3 percent is extremely hesitant [15]. The source of COVID-19 health information (OR:1.63; 95% CI:1.07-2.47), belief that the vaccine is effective against other variants of the virus (OR:7.24; 95% CI:4.58-11.45), history of influenza vaccination (OR:1.62; 95% CI:1.07-2.47), and the possibility that vaccination will be required before international travel (OR:16.52; 95% CI:10.23-26.68) were non-demographic factors. The findings of this study shed light on the factors other than demographics that influence the uptake of the COVID-19 vaccine in Saudi Arabia. To increase people's willingness to get vaccinated against COVID-19, the government should dispel the disease's myths and misconceptions. Badur and his colleagues (2021) demonstrated in their most recent study that the Kingdom of Saudi Arabia (KSA) MoH's preventative measures, primarily MenACWY vaccination, targeted initially at high-risk KSA residents and then all pilgrims entering KSA, have resulted in significant drops in IMD within KSA with no major pilgrimage-associated outbreaks [16]. However, endemic disease and isolated cases persist, particularly among children under the age of 15 (which may be underestimated). To provide an accurate picture of the extent of IMDs, the current surveillance system must be strengthened to track epidemiological shifts caused by different serogroups as well as vaccination uptake rates. This may make determining the efficacy of the current MenACWY vaccine easier. Given the ongoing Men disease concern in KSA and among visiting pilgrims, additional immunization methods could be considered.

In contrast, according to a study [17], 130 participants denied using social media to spread the word about COVID-19. Having a chronic condition (odds ratio [OR]=0.367, P=0.019), thinking that infertility is a side effect of the COVID-19 vaccine (OR=0.298, P=0.009), worrying about a serious side effect from the vaccine (somewhat concerned: OR=0.294, P=0.022, very concerned: OR=0.017, P0.0001), and deciding to get vaccinated based on information shared on social media (OR=0.260 Multivariate analysis eliminated the influence of social media (OR=0.356, P=0.071) and the perception that vaccination causes infertility (OR=0.0333, P=0.054) on the final decision.

## Summary and Conclusion

Many parents are hesitant to get the COVID-19 vaccine for their children due to concerns about its efficacy, safety, and necessity. Acceptance of childhood COVID-19 immunization was connected with using the website of the national official healthcare authority. Because parents' intentions to vaccinate their children are less than ideal, campaigns aimed at hesitant parents could increase COVID-19 vaccine uptake.

| Author, Year | Study design | Total sample | Type of the participant | Finding | Conclusion |
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| ***People's willingness to be vaccinated*** | | | | | |
| Magadmi, R. M., & Kamel, F. O. (2021). | Cross-sectional study. | 3101 participants | The study targeted potential participants from the main five regions in Saudi Arabia to attain results that would be generalizable across the country | 44.7% were open to receiving the COVID-19 immunization if it were made available, while 55.3% were hesitant. Those who were younger and male who were vaccinated against the seasonal flu were more receptive to the idea of doing so. | Results can be utilized in planning vaccination campaigns while waiting for vaccine development. |
| Narapureddy, B. R., Muzammil, K., Alshahrani, M. Y., Alkhathami, A. G., Alsabaani, A., AlShahrani, A. M., & Alam, M. M. (2021). | A web-based, cross-sectional study | 796 people | Study samples were selected using snowball sampling after meeting the following inclusion criteria. | Nearly (92%) were familiar with COVID vaccinations. Among those surveyed, (47%) preferred vaccines made in the United States, while (28%), in second place, favored vaccines made in Saudi Arabia. There were (33.1%) of them were unwilling to get the immunization. (50%) of the people surveyed had faith that the COVID vaccination would be effective in preventing the disease | Vaccination acceptance can be increased if the government launches interventional vaccination education efforts that are culturally acceptable and work to dispel myths and concerns about the safety and effectiveness of COVID-19 vaccinations. |
| Assiri, A., Al-Tawfiq, J. A., Alkhalifa, M., Al Duhailan, H., Al Qahtani, S., Dawas, R. A., & Jokhdar, H. (2021). [10] | Qualitative | | | Noted that vaccination coverage in KSA is increasing, with 43% of the population protected as of the end of 2010. However, there were a total of 442,071 cases of COVID-19 in the country, resulting in 7264 deaths (1.6%). It is too soon to tell whether or not the immunization reduced overall incidence and mortality. | The Kingdom of Saudi Arabia (KSA) is actively working to ensure that all of its citizens are up to date on their vaccinations, and has implemented measures including requiring proof of immunization before entering government buildings and public facilities |
| Alshahrani, S. M., Dehom, S., Almutairi, D., Alnasser, B. S., Alsaif, B., Alabdrabalnabi, A. A., ... & Mahtab Alam, M. (2021). | A cross-sectional study. | 758 participants | the respondents must be 18 years or older | 64 percent express a willingness to take the vaccination, whereas 18.3 percent are very reluctant. | The results of this research shed light on the factors outside demographics that have an impact on the uptake of the COVID-19 vaccine in Saudi Arabia. To improve people's willingness to get vaccinated against COVID-19, the government should dispel the myths and misconceptions surrounding the disease. |

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| Badur, S., Al Dabbagh, M. A., Shibl, A. M., Farahat, F. M., Öztürk, S., Saha, D., & Khalaf, M. (2021). | Qualitative | | All age group | Made it clear that the KSA MoH's preventative measures, primarily MenACWY vaccination, targeted initially towards high-risk KSA residents and subsequently all pilgrims entering KSA, have resulted in significant drops in IMD within KSA with no major pilgrimage-associated outbreaks. But endemic disease and isolated cases persist, especially among youngsters younger than 15 years old (which may be underestimated)., both in KSA and among visiting pilgrims. | In order to provide an accurate picture of the extent of IMDs, the current surveillance system needs to be bolstered to keep track of the epidemiological shifts caused by different serogroups and the rate of vaccination uptake. This can make it easier to measure the effectiveness of the current MenACWY vaccine. Additional immunization methods could be considered in light of the ongoing MenB disease concern |
| Othman, S. S., Alsuwaidi, A., Aseel, R., Alotaibi, R., Bablgoom, R., Alharbi, R., & Ghamri, R. (2022). | A cross-sectional study. | 504 participants | General population | Having a chronic condition (odds ratio [OR]=0.367, P=0.019), thinking that infertility is a side effect of the COVID-19 vaccine (OR=0.298, P=0.009), worrying about a serious side effect from the vaccine (somewhat concerned: OR=0.294, P=0.022, very concerned: OR=0.017, P0.0001), and deciding to get vaccinated based on information shared on social media (OR=0.260 Multivariate analysis eliminated the influence of social media (OR=0.356, P=0.071) and the perception that vaccination causes infertility (OR=0.0333, P=0.054) on the final decision. | People's willingness to get vaccinated against COVID-19 was not correlated with their use of social media. Research is needed to determine if this finding is generally applicable to the Saudi population, however. |
| ***Saudi parents' views on the COVID-19 vaccine.*** | | | | | |
| Ennaceur, S., & Al-Mohaithef, M. (2022). | A cross-sectional study. | 379 parents | Parents of a child under the age of 18 | 44% (167) of parents said they did so. Parents who were younger (86; 22.7%), married (135; 35.6%), or from Saudi Arabia (114; 30%) were more likely to worry about their children contracting the virus. Parents' primary motivation for vaccinating their children was protecting other members of the household from contracting the disease (40.9%). | Parents have varied perceptions of the likelihood of coronavirus transmission and associated health problems, as well as the vaccine's efficacy and potential side effects. These findings may be useful for informing public health awareness campaigns and health promotion programs that target children and focus on good parenting styles |

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| Baghdadi, L. R., Hassounah, M. M., Younis, A., Al Suwaidan, H. I., & Al Khalifah, R. (2021). | Cross-sectional study | 577 caregivers of children aged ≤2 years | Caregivers of children aged ≤2 years | During the lockdown time, Snapchat usage increased from the pre-pandemic period by a large margin (21.9% vs 17.2%, P =0.001), while Twitter usage remained relatively stable at 29.9%. Caregivers' worry was amplified, and their decisions regarding their children's immunizations were negatively impacted, after they engaged in social media use. YouTube and Facebook searches in particular were associated with a 2.63-fold (P=0.008) and 3.66-fold (P=0.025) increase in the likelihood that immunizations would be delayed. | Found that throughout the pandemic, caregivers' health-information seeking behavior was oriented toward social media networking. Particularly in Saudi Arabia, social media like YouTube and Facebook influenced parents' decisions over their children's immunizations. |
| Samannodi, M., Alwafi, H., Naser, A. Y., Alabbasi, R., Alsahaf, N., Alosaimy, R., ... & Salawati, E. (2021). | Cross-sectional study | 581 participants | Parents | 63.9% percent of parents said they would vaccinate their children if the option were available. About 40% of these parents have indicated an interest in having their child receive the COVID-19 vaccine early. Roughly one-fourth (23.9%) of parents said they would protect their children from influenza this season with a vaccination. The lack of knowledge regarding the vaccine's efficacy in youngsters was the most widely cited reason for reluctance. | If the vaccine were made available to Saudi Arabian children, a sizable fraction of their parents would opt to vaccinate their children. To increase people's faith in vaccinations and the healthcare system, it's important to increase public health awareness. |
| Temsah, M. H., Alhuzaimi, A. N., Aljamaan, F., Bahkali, F., Al-Eyadhy, A., Alrabiaah, A., ... & Alhasan, K. (2021). | Mixed-methods study | 3,167 participants | Parents | A total of 47.6% have made up their minds to get their kids vaccinated against COVID-19. Lack of enough safety information (cited by 69% of those who said no) and concern about potential adverse effects (cited by 60.6%) were other major factors. Parents were more likely to believe that routine childhood immunizations are important and effective than that the COVID-19 vaccine. | Sizeable fraction of parents is apprehensive about the COVID-19 vaccine because they are less convinced in its efficacy, safety, and whether it is required for their children. More people were willing to vaccinate their children against COVID-19 if they learned about it on the official website of the national healthcare authority. |

**Table:** Research Matrix.

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