# Actions and Perspectives towards the COVID-19 Candidate Vaccines

# Abstract

# While coronavirus disease 2019 (COVID-19) has deadly affected several people in the world, there are questions around COVID-19 candidate vaccine acceptance. It is important to explore the available evidence on the dynamics around vaccine acceptance and refusal since this can help us to reduce individuals’ hesitancy about future vaccines. This article reviews the available literature on how individuals accept or reject candidate vaccines by focusing on their perceptions and circumstances. It investigates what the literature tells us about individuals’ perceptions and behavioural patterns towards the COVID-19 candidate vaccine by concentrating on their individual, interpersonal, community, and societal level influences. This literature review presents the multiple factors and conditions around how people accept or reject the potential vaccine. This literature review found four key themes around individuals’ perspectives on candidate vaccines. These are health care professionals’ concerns as well as knowledge about candidate vaccines, the high level of vaccine hesitancy among the public, the roles of public health authorities, and the level of mistrust of the vaccination in this complex coronavirus environment. Therefore, being aware of these elements around vaccination regarding interventions, it is critical to improving strategies around vaccine acceptance for human well-being.

Key words: COVID-19, vaccine acceptance, vaccine hesitancy, trust

# Introduction

To reduce and end coronavirus disease, developing an efficient vaccine is critical for public health. However, people might not be ready to get the COVID-19 vaccine due to their hesitancy around the safety and effectiveness of the candidate vaccines. Therefore, we need to recognise the factors around vaccine hesitancy to understand how individuals can trust to the available vaccine by concentrating on their perspectives and conditions. To intervene and end the pandemic, the development of an effective and safe COVID-19 vaccination is vital (Frank & Arim, 2020). Moreover, Schaffer Deroo et al., (2020) noted that the concerns around vaccination regarding safety, freedom of choice and the importance of vaccines should be taken into account. Therefore, this study aims to explore what the literature tells us about individuals’ concerns, knowledge and actions about COVID-19 candidate vaccines.

Larson et al., (2014) reviewed the literature to describe related concepts around vaccine hesitancy by focusing on “different settings including its context-specific causes, its expression and its impact” (p. 2150). Also, they developed a model for measuring key elements around vaccine hesitancy. Larson et al., (2014) found complex and dynamic multitype factors of vaccine hesitancy including contextual issues (social policies, social media, etc.); individual/social group influences (beliefs, awareness, experiences on vaccines, etc); and vaccination issues (benefits, risks, costs, etc). They argued that considering these multiple factors around vaccine hesitancy can improve the understanding of the individuals’ concerns around the vaccines. Therefore, the scholars should critically discuss available treatments as well as the issues of vaccine hesitancy in the public to be able to end the COVID-19 pandemic. Importantly, Larson, (2020) noted that the governments and researchers should improve individuals’ understanding of immune systems by recognising how vaccination is the most important approach to protect the public from infected people.

# Method

A critical literature review was the method of this study. The following keywords were examined in the literature: “candidate vaccines, vaccine, COVID-19 vaccine, vaccine acceptance, coronavirus, interventions, treatment, vaccine hesitancy, vaccination, public health.” English and Turkish languages were used for the search articles, and the timeframe for the search was 2019 to 2020. This timeframe was selected based on the time of recognising the COVID-19 in the world. PsycINFO, Web of Science, Science Direct, ProQuest and PubMed were the databases for search. This study explores two key questions: (1) What is the available evidence about the perspectives about COVID-19 candidate vaccines among public and health care workers? (2) What are the actions and views of the COVID-19 candidate vaccine within individuals’ unique conditions?

# Results

Several researchers found that people have been intended to refuse the COVID-19 vaccine due to potential side effects, inadequate knowledge about the vaccine, lack of trust in the vaccine producers and insufficient confidence around the effectiveness and safety of the vaccine. Moreover, the role of public health authorities and governments have also indicated as an important factor in individuals’ vaccine acceptance. However, providing accurate information to the public about safe and effective vaccines can improve individuals’ willingness to have the COVID-19 vaccine. This review identified four key factors around individuals’ perspectives and actions towards the COVID-19 candidate vaccines including (1) health care professionals’ concerns as well as knowledge about candidate vaccines, (2) the high level of vaccine hesitancy among the public, (3) the roles of public health authorities, and (4) the level of mistrust of the vaccination in this complex coronavirus environment.

## Health Care Workers’ Perspectives About the Vaccination

Several studies examined key elements around individuals’ vaccine hesitancy by focusing on the perspectives among either patients or health care providers during COVID-19 (Callaghan et al., 2020; Dror et al., 2020; Frank & Arim, 2020; Harrison & Wu, 2020; Kwok et al., 2020; Schiavo, 2020). For example, Kwok et al., (2020) examined how nurses intend to have the COVID-19 vaccine in Hong Kong as nurses are key professionals to build trust in society. This study has focused on nurses’ hesitancy about the COVID-19 vaccine, stressful work environment based on coronavirus crisis and their intention to have the COVID-19 vaccine. Kwok et al., (2020) found that “influenza vaccine uptake was associated with working in public hospitals and all 5C constructs, whereas stronger COVID-19 vaccination intention was associated with younger age, more confidence, less complacency and more collective responsibility towards the vaccine” (p. 3). According to this study, many community members and nurses are not ready to have a vaccine when it is available. Therefore, improving approaches to increase individuals’ trust to have vaccine was identified as an important approach for vaccine acceptance.

Fu et al., (2020) examined the factors around the acceptance for the COVID-19 vaccination by implementing internet-based surveys with 352 health-care workers and 189 people in the general population in Chine. They stated that health care workers have been more willing to take the COVID-19 vaccine than the general population. The reasons for the acceptance of vaccine were about the-long term epidemic process, willing to have social networks and more likely to be infected in a hospital environment. The safe vaccination process and social network issues have been important dynamics to accept vaccine among the general population. It is suggested to provide education about the benefits of vaccination to the communities (Fu et al., 2020). Similarly, Dror et al., (2020) investigated the willingness of having a vaccine among 1941 healthcare workers and the general population in Israel by conducting questionnaires. They found that the majority of healthcare workers who have worked with COVID-19 patients or had feelings of the risks have been more willing to accept COVID-19 vaccination when it is available. Individuals who are not at risk to be infected hold more vaccine hesitancy. Therefore, education about reducing vaccine hesitancy appears to be critical for COVID-19 treatment processes (Dror et al., 2020).

Dikmen (2019) explored the health care workers’ awareness, knowledge, attitude and behaviour about adult vaccines in Turkey. It was conducted a questionnaire consisting of 23 questions about sociodemographic characteristics of doctors and nurses, and their awareness, knowledge, attitude and behaviour about vaccines. Dikmen (2019) also conducted face-to-face interviews. While some variables such as age, gender, education, occupation, and income level, affected their views about the vaccination, it was concluded that informing the society about adult vaccines and increasing vaccination practices is necessary (Dikmen, 2019). Similarly, Şimşek, (2020) investigated how family practitioners’ sociodemographic-occupational characteristics, opinions, attitudes and behaviors about vaccination impacted on their vaccine-opposition by conducting a questionnaire in Turkey. The majority of participants have faced clients’ vaccine refusals. Family practitioners stated that they tried to persuade their clients to vaccinate by providing information about vaccination. A few participants stated that they respected the opinion of the person who was anti-vaccine and could not undertake it. Almost all participants stated that they were against the idea of vaccine rejection as well as the idea of vaccine hesitation. They suggested that anti-vaccination should be taken into consideration by legal authorities as an important public health problem. It has been reported that the training on vaccines and anti-vaccination is insufficient. Therefore, effective and adequate training for family practitioners should be implemented (Şimşek, 2020).

Butter et al., (2020) explored the dynamics around vaccine hesitancy and vaccine acceptance by surveying UK adults including health care workers and the general population. Vaccine acceptance might be related to the higher possibility of being infected. For example, health care workers might hold more vaccine acceptance than general groups due to the high possibility of being infected. Butter et al., (2020) found that some female health care works held vaccine hesitancy when they perceived a low level of risk of being infected. Similarly, non-key health workers held vaccine hesitancy if they did not know anyone infected. It was suggested that public health authorities should inform the public as well as health care workers about symptomless contamination and transmission (Butter et al., 2020).

## Key Circumstances around Vaccine Hesitancy during COVID-19

While “age, immunocompromise, and other pre-existing medical conditions” are the issues of the ineligibility for the COVID-19 vaccine, it is important to explore why some people hold vaccine hesitancy during the coronavirus crisis (Bertin et al., 2020). Fisher et al., (2020) examined the elements around the reasons for vaccine hesitancy by conducting a cross-sectional survey in the United States (US). The majority of participants were unwilling to vaccine due to the concerns around general vaccine issues, insufficient information and trust about the vaccine and antivaccine behavioural patterns or views (Fisher et al., 2020). They recommend the urgent need for multifaced studies to improve individuals’ acceptance of the COVID-19 vaccine in the future. Likewise, Callaghan et al., (2020) examined the relationship between individuals’ COVID-19 vaccine hesitancy and the reasons why they intended to refuse a COVID-19 vaccine in the US population by implementing a survey with 5,009 adults. They concentrated on how the participants’ demographic issues, political thought, and the experiences of COVID-19 affected COVID-19 vaccine hesitancy. Some participants (31.1%) were not willing to intend to have future COVID-19 vaccine. People who hold more concerns about being infected or information the safety of effectiveness about vaccine have been more likely to accept the vaccine. However, if people hold negative views about the effectiveness of vaccines and safety were more likely to refuse it (Callaghan et al., 2020).

Murphy et al., (2020) explored individuals’ resistance and hesitancy to a COVID-19 vaccine in the future among the population in the United Kingdom (UK) and Ireland by concentrating on the participants’ psychological characteristics. They reported that “vaccine hesitancy was evident for 26% and 25% of Irish and UK samples, respectively, while vaccine resistance was evident for 9% and 6%, respectively.” Participants who hold inadequate information about COVID-19 and lack of trust in the authorities’ sources have been more likely to resist having a vaccine. In this sense, Murphy et al., (2020) recommended that efficient communication tools and strategies should be developed by focusing on individuals’ psychological constructs around hesitancy and resistance.

Neumann-Böhme et al., (2020) investigated the reasons why people reject potential COVID-19 vaccination. While the majority of men were (77.94%) were willing to take the COVID-19 vaccine and fewer women (70.15%) were ready to be vaccinated. The ages between 18-24 were more willing to be get vaccinated than other age groups. The reasons for the unwillingness to take the future COVID19 vaccine was associated with the concerns around the side effects among 36% women and %19 men. As we can see, women held more vaccine hesitancy than men. Many participants were not ready to be vaccinated and this issue illustrates how people might continue to spread coronavirus without vaccination. To reduce vaccine hesitancy, highlighting the elements around the benefits of their social life can improve individuals’ willingness to be vaccinated (Neumann-Böhme et al., 2020). It emphasised that the reduction of vaccine hesitancy is linked to the increase of vaccination and individuals’ well-being.

Lazarus et al., (2020) explored key conditions around a COVID-19 vaccine acceptance with the demographic variables. They found that the majority of participants (71.5%) were ready to have the future COVID-19 vaccine. Many participants also stated that they would like to take a COVID-19 vaccine based on their employers’ suggestion. Importantly, many people were willing to take a vaccine also more likely to trust the information from governmental bodies. It is highlighted that effective strategies to respond to individual’s vaccine hesitancy should be developed to increase vaccine acceptance by focusing on its relation to the individuals’ demographic characteristics (Lazarus et al., 2020). Likewise, Detoc et al., (2020) examined the factors around how individuals intend to get the COVID-19 vaccine in France. They found that 77 % of the participants would accept a COVID-19 vaccine while 35 % of them held vaccine hesitancy. The factors around the acceptance of vaccine have been related to the “older age, male gender, fear about COVID-19, being healthcare workers and individual perceived risk” (p. 1). As we can see in these related factors of acceptance, being at risk of infection appeared to be an important indicator of the readiness to take a vaccine.

Wang et al., (2020) explored the relationship between the demographic variables, risk awareness, the influences of potential COVID-19 and their attitudes around acceptance of the vaccine in Chine by conducting cross-sectional surveys. They also aimed to provide recommendations for effective strategies on vaccination and immunization programs. Almost all participants (91.3%) were ready for the vaccination. On the other hand, some of them (47.8%) were unwilling to take the vaccine until the safety of the vaccine was fully confirmed. The reasons for accepting vaccination were related to “being male, being married, perceiving a high risk of infection, being vaccinated against influenza in the past season, believing in the efficacy of COVID-19 vaccination or valuing doctor’s recommendations” (Wang et al., 2020). Studies about vaccine hesitancy have pointed out how individuals’ gender, marriage status, age, being a healthcare worker, the level of risk of infection and confidence about the safe vaccine are key dynamics around vaccine acceptance.

Several studies paid attention to the vaccine hesitancy and its relation to the individual factors including demographic characteristics and individual perspectives. Moreover, some studies highlighted the importance of roles of the social policymakers and public health authorities on the individuals’ willingness to take the vaccination (Frank & Arim, 2020; French et al., 2020; Sherman et al., 2020; Trueblood et al., 2020). Improving individuals’ knowledge of disease as well as the potential vaccines and the benefits of the treatments can increase trust in the future vaccine. Many scholars examined the relationship between the unwillingness to have future COVID-19 vaccine and mistrust of the vaccination programmes (Bertin et al., 2020; Fadda et al., 2020; Le et al., 2020; Magadmi & Fatemah, 2020; Palamenghi et al., 2020). Importantly vaccine developers need to inform people about the benefits of vaccines since this can reduce their mistrust to the vaccine (Fadda et al., 2020). The reasons for the mistrust of the vaccine have been identified. These are community members’ insufficient information about the development of coronavirus vaccines and small or unpopular manufactures developed vaccine candidates (Le et al., 2020).

# Conclusion

It is critical to be aware of the importance of providing rigor information about vaccine regarding people’s trust in the COVID-19 vaccines. When the health care professionals and public health authorities provide accurate information about the available intervention such as a vaccine, people can take the vaccine with trust. However, many factors might impact individuals’ vaccine hesitancy. For example, lack of knowledge about vaccines among health care workers as well as the general population, insufficient knowledge about the effectiveness and safety of the vaccine, the willingness to contact with their networks, high or low possibility of being infected, the level of trust in the public health workers, policymakers and government and mistrust to the vaccination programs. Overall, these different circumstances and factors have been related to the individuals’ readiness to have a COVID-19 vaccination. When all these multiple factors towards COVID-19 vaccination are taken into account, future interventions can be effectively implemented.

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