

# An International Study of the COVID-19 Pandemic Based on Population

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## Abstract

Since the start of the pandemic, several COVID-19 vaccines have been created. The purpose of this research was to assess the variables influencing COVID-19 vaccination intention. From October 2020 to December 2021, 26 nations participated in a global survey that was performed online and self-administered. Information on demographics, socioeconomic standing, and medical conditions was gathered. The relationships between vaccine intention and variables including perceptions and the presence of chronic physical and mental disorders were investigated using a logistic regression. People were more receptive to vaccination if they identified as female, were older in age, had complete health insurance coverage, were students, belonged to an older age group, had more education, identified as female, belonged to a larger age group, or had already received an influenza vaccination. On the other hand, people who worked part-time, were self-employed, or were on welfare were less likely to say they intended to get immunised. Participants with physical or mental health issues were less likely to consent to vaccination, especially those with mental illness, sickle cell disease, or a history of cancer within the past five years. Government or family doctor recommendations were linked to a stronger intention to vaccinate. Lower vaccine intention was linked to the presence of chronic diseases. People who already have health issues are particularly susceptible to health issues and may have more severe COVID-19 symptoms. Future studies should assess the efficacy of treatments aimed at changing the attitudes of at-risk groups toward vaccination. As a result, government-sponsored public awareness efforts and proactive medical professionals' support.

**Keywords:** Health services • COVID-19 • Mental diseases • Chronic diseases • Immune system

## Introduction

Due to the disease's quick rise in prevalence, health services have been severely interrupted. Governments have since implemented precautionary measures to reduce social gatherings and movements to safeguard populations from illness. However, from an economic and societal standpoint, such actions can be quite expensive. Effective vaccinations were created by the pharmaceutical and healthcare industries to lower illness incidence and severity, particularly in chronically ill vulnerable populations. By boosting the immune system, the COVID-19 vaccinations have been demonstrated to be beneficial in reducing the consequences of the disease. Despite the vaccine's advantages, some people still refuse to get it for a variety of reasons, including cost and safety. It is crucial to look at the perceptions that support vaccination intention. The intention to acquire the COVID-19 immunization has been examined in earlier investigations. These research, however, are restricted to one nation, and the conclusions lack external validity and generalizability. Additionally, the research neglected to account for vulnerable populations' subgroups, such as people with long-term physical or mental health issues, who are more prone to sickness.

## Literature Review

The objective of the current study was to assess the relationships between

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COVID-19 vaccination intent and a variety of variables, such as demographic traits, socioeconomic status, and the presence of long-term physical and mental health issues. Additionally, a number of attitudes impacting vaccination intention were looked at. Finding subgroups that might be less susceptible to vaccination was the goal. The Association of Pacific Rim Universities Global Health Program performed a global study to identify the variables influencing COVID-19 vaccination intention. The COVID-19 vaccine in relation to intention: the country of manufacture for the vaccine, recommendations from family doctors and the Ministry of Health, whether the vaccine has been in use for two years or more, whether there are serious side effects caused by the vaccine, whether the vaccine is used in other countries, the likelihood of contracting COVID-19, the ease of access to the vaccine if it is free of charge, and whether there are restrictions on group vaccination. Based on the demographic information and socioeconomic position of the study participants, a descriptive statistic of the those individuals was carried out. We looked at the relationships between vaccination intention and the existence of chronic illness, mental illness, and COVID-19 vaccine perceptions. The outcome variable was vaccination intention, and all other factors were taken into account as the independent variable. Separate binary regression models were set up to examine the factors listed above. The predictor variable, vaccination intention, was tested for association with the explanatory variables whilst controlling for potential confounding demographic and socio-economic factors. All p values less than 0.05 were considered statistically significant.

## Discussion

The study's objective was to assess the relationship between COVID-19 vaccination intention and demographic traits and vaccination attitudes. Over 15% of those surveyed stated that they would not be open to receiving the COVID-19 vaccination. According to the correlational analysis, a high level of vaccine intention was substantially correlated with age, gender, years of schooling, study and job status, health insurance coverage, welfare benefits, and a prior history of influenza vaccination. The results of the current study support earlier findings that certain socioeconomic and demographic factors could predict vaccine intention and reluctance. The focus in earlier literature has been on men [1]. In our study, belonging to older age groups, better

educational attainment, employment at the time of the study, a history of influenza vaccination, and health insurance coverage were often repeated demographic and socioeconomic factors related with high rates of vaccine intention. The results are mixed throughout the literature; some studies found that men had a stronger sense of vaccination intention, while others showed that women were more likely to get the shot. Higher educational attainment was linked to a higher likelihood of COVID-19 vaccination intention, supporting a previously documented link between vaccination intention and education. This might be because people who have more exposure to educational materials are more likely to understand the need of building herd immunity, which motivates them to take the necessary safety measures to guard against COVID-19. Chronic physical and mental health issues were linked to vaccine reluctance and lower levels of vaccination intention in our sample [2]. This may be linked to a lack of confidence in the vaccine development process, a low perception of the disease's risk, as well as significant worries about the safety of vaccines [3]. The main justification for vaccine reluctance has been attributed to the possibility of increasing pre-existing medical issues as a result of possible adverse effects and unidentified drug interactions. With vaccine side effects being the biggest predictor of vaccine hesitation, vulnerable populations, such as cancer patients, displayed the same level of concern as the general population. Given their immunocompromised state, the vaccine hesitancy and lower level of vaccination intention shown by this category are concerning, as the risk for COVID-19 incidence, severity, and death is noticeably higher for persons with chronic health conditions. It is normal for people to voice concern or scepticism about a vaccine's effectiveness or the risk that the disease is thought to offer when it comes to new immunizations. Therefore, it is essential to increase public confidence in vaccinations by demonstrating their value in achieving herd immunity and safeguarding the larger population. In this study, the main perceptions that affected higher levels of vaccination intention were vaccination cost, medical advice, and the feasibility of receiving the vaccine at the chosen location and time [4]. An individual's faith in the COVID-19 vaccine may vary significantly depending on the advice of authorities and medical specialists, according to the literature from the past. Given their confidence in the healthcare system or in the aforementioned specialists, some may feel more at ease, but others may exhibit a deep mistrust of governmental institutions, casting doubt on informational campaigns that promote vaccination. Additionally, the opportunity of getting the vaccine at one's convenience influences vaccine intention. People who live in underdeveloped nations, particular subgroups like racial or ethnic minorities or people from lower socioeconomic origins, or people who reside in rural areas may have more difficulty getting access to medical care generally and consequently less access to the vaccine. Additionally, the price of the vaccine and whether it is free could help to increase vaccination intentions [5]. If the vaccine is free, there is a higher chance that vaccination

rates will raise since people will be more likely to seek it out because it is readily available.

Although easily available, individuals continue to show high resistance to vaccination and low levels of vaccine intention, therefore in some circumstances this is not a deciding factor in decision-making. The novelty of mRNA technology might lower the acceptability of the vaccination, according to earlier research that compared the vaccine intentions of mRNA and traditional vaccines. Social conformity, however, might lessen such vaccine hesitancy. Given that local communication and healthcare systems differ among nations, it is likely that the participants' countries of origin had an impact on their vaccination intentions. For instance, Thailand and the Philippines during the epidemic paid a variety of costs like hospitalisation, community isolation, and laboratory testing.

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## Conclusion

In this study, multivariable logistic regression models were used to identify people who had lower vaccination intentions. The findings showed that those with any form of chronic medical or mental diseases were less likely to consent to vaccinations, particularly those with cancer, cognitive abnormalities, and sickle cell disease. These groups of persons are more susceptible to the severe COVID-19 symptoms because their immune systems are frequently weaker. Participants were more likely to get immunised when advised to do so by the government and their family doctors, thus policymakers should collaborate with the medical community to advise those with chronic illnesses who are at risk of becoming vulnerable.

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