KalaivaniKalyanFinalProjectStep1

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Why is Vaccination important?

Github link

https://github.com/kalaikalyan/hello-world

Introduction

Vaccination is really important to fight the pandemic and to get back to normal lifestyle. It helps the economy and the businesses affected during pandemic back to life.

Research questions

1. Role of Vaccination on air travel during Pandemic?
2. Effect of Pandemic on student's mental health?
3. Did crimes increase due to pandemic and were the criminals vaccinated?
4. Unemployment rate during the pandemic?
5. Work from Home Vs Back to office after Vaccination?
6. What is the Vaccination rate?
7. What percent of the US population is Vaccinated?

Approach

Since Vaccination is so important to return to our natural lifestyle, I would like to study the effectiveness of Vaccines on health care workers.Using this knowledge, I will explore the issue deeper using the skills I have learned to analyse the data and form an opinion on the question.

How your approach addresses (fully or partially) the problem.

Throughout the COVID-19 pandemic, health care personnel have been at high risk for exposure to SARS-CoV-2, the virus that causes COVID-19, through patient interactions and community exposure . The Advisory Committee on Immunization Practices recommended prioritization of HCP for COVID-19 vaccination to maintain provision of critical services and reduce spread of infection in health care settings based on the sources. Early distribution of two mRNA COVID-19 vaccines (Pfizer-BioNTech and Moderna) to HCP allowed assessment of the effectiveness of these vaccines in a real-world setting. A test-negative case-control study is underway to evaluate mRNA COVID-19 vaccine effectiveness (VE) against symptomatic illness among HCP at 33 U.S. sites across 25 U.S. states. Interim

analyses indicated that the VE of a single dose (measured 14 days after the first dose through 6 days after the second dose) was 82%, adjusted for age, race/ethnicity, and underlying medical conditions. The adjusted VE of 2 doses (measured ≥7 days after the second dose) was 94% (95% CI = 87%–97%). VE of partial (1-dose) and complete (2-dose) vaccination in this population is comparable to that reported from clinical trials and recent observational studies, supporting the effectiveness of mRNA COVID-19 vaccines against symptomatic disease in adults, with strong 2-dose protection. All this information shows how my approach can educate me well enough to analyse the data and come to a conclusion.

Data (Minimum of 3 Datasets - but no requirement on number of fields or rows)

https://www.cdc.gov/mmwr/volumes/70/wr/mm7020e2.htm#T1_down As of March 18, 2021, 623 case-patients and 1,220 controls had been enrolled. The median ages of case-patients and controls were 38 years (range = 19–69 years) and 37 years (range = 19–76 years), respectively (Table 1)
https://www.cdc.gov/mmwr/volumes/70/wr/mm7020e2.htm#T2_down Ten percent of case-patients and 20% of controls had received 1 dose of COVID-19 vaccine ≥14 days before the test date, and 3% of case-patients and 15% of controls had received 2 doses ≥7 days before the test date (Table 2). https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/underlying-evidence-table.html Evidence used to inform the list of underlying medical conditions that increase a person's risk of severe illness from COVID-19. In alphabetic order by section.

Required Packages
```
library(ggplot2)
library(readxl)
library(knitr)
library(car)

## Loading required package: carData
```

Plots and Table Needs

I will provide tables and histograms based on vaccinated population and unvaccinated population. The difference in spread and infection of COVID 19 based on these two groups. I will look for majot differences to highlight it through my plots and tables. I added some sample tables in the citations section if you want to check it out.

Questions for future steps
- How the Interim Estimates of Vaccine Effectiveness of Pfizer-BioNTech and Moderna COVID-19 Vaccines Among Health Care Personnel helped in the effective vaccination of general public?
- How far the Vaccination is effective against different variants?
- How Vaccinations helps with the hospitalization rate if we get covid?