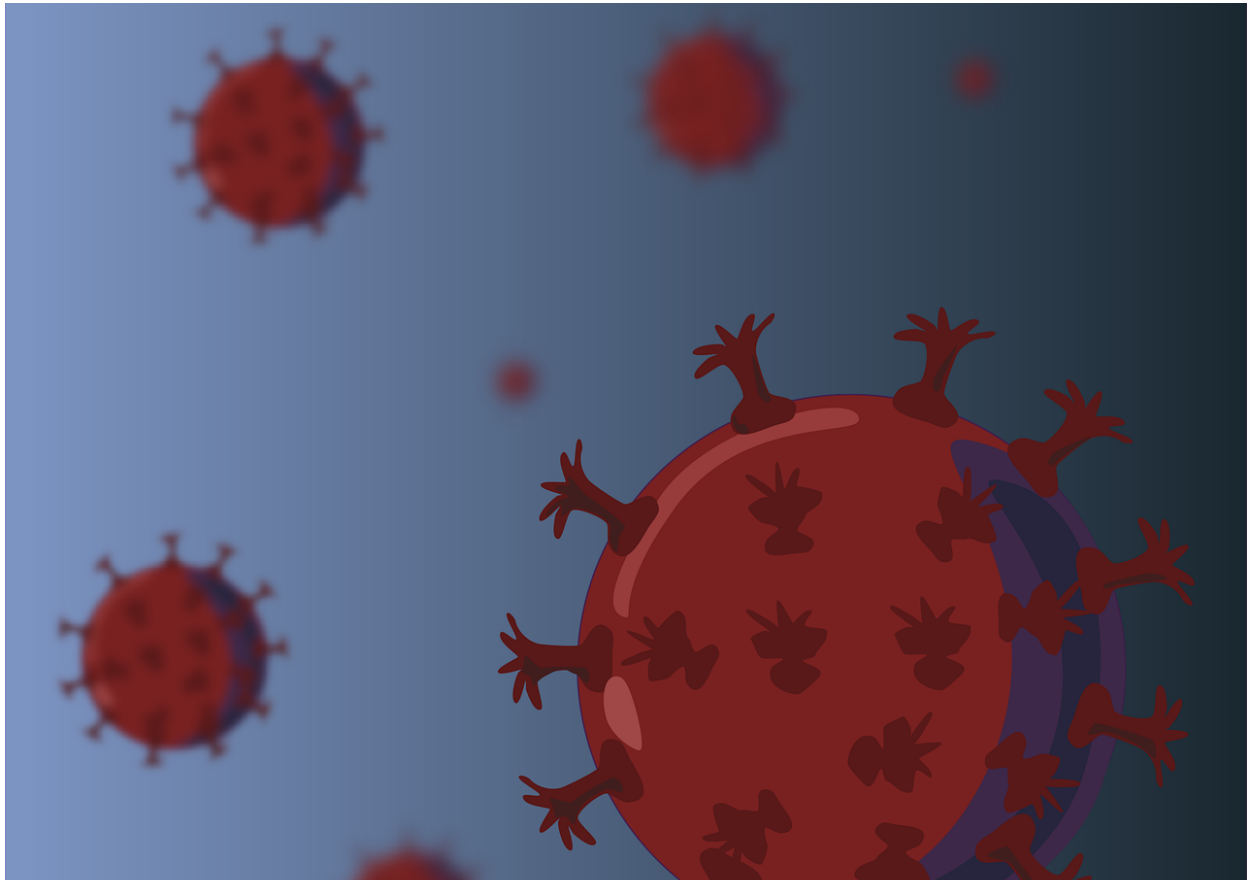


MATHS PORTFOLIO

Coronavirus, its impact and vaccinations in the state of Punjab



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INTRODUCTION

Coronaviruses are a group of related RNA viruses that cause diseases in mammals and birds. In humans and birds, they cause respiratory tract infections.^[1] The recent pandemic of **COVID-19 (COronaVirus Disease-19)** is caused by **Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)** virus.^[2] The first cases of the disease were identified in the city of Wuhan, China in the month of December 2019.^[3] COVID-19 has a huge impact on our lives as we have been taken over by it and are conquering it by the means of vaccinations.

IMPACT OF COVID-19 ON PUNJAB

COVID-19 had a large impact in India. The state of Punjab is among the worst hit states in India.^[4]

DATA AND PROBABILITIES^{[5][6][7]}

	Number	Probability
Number of cases	584237	¹ /52.18
Number of deaths	16453	¹ /35.50
Number of vaccinations	1,61,14,950	¹ /1.892

Probability of number of cases has been calculated by using the formula:

$$\frac{Number}{Population} = \frac{1}{x}$$

$$x \approx 52.18$$

Probability of number of deaths has been calculated by using the formula:

$$\frac{Number}{Cases} = \frac{1}{x}$$

$$x \approx 35.50$$

Probability of number of vaccinated has been calculated by using the formula:

$$\frac{\text{Number}}{\text{Population}} = \frac{1}{x}$$

$$x \approx 1.892$$

VACCINATIONS



A vaccine is a biological preparation that provides active acquired immunity to a particular infectious disease. A vaccine typically contains an agent that resembles a disease-causing microorganism and is often made from weakened or killed forms of the microbe, its toxins, or one of its surface proteins.^[8] There are currently 3 vaccines in India, Covishield, Covaxin and the Russian

Sputnik. All three of these vaccines are tested and approved.

SOURCES/CITATIONS

[1]: [Coronavirus:Wikipedia](#)

[2]: [Severe acute respiratory syndrome coronavirus 2:Wikipedia](#)

[3]: [COVID-19:WHO](#)

[4]: [Coronavirus in Punjab:The Economic Times](#)

[5]: [Coronavirus State Data:MoHFW](#)

[6]: [Population of Punjab:PopulationU](#)

[7]: [Vaccination Data:MoHFW](#)

[8]: [Vaccine:Wikipedia](#)

* All probabilities have been calculated with respect to the data from the above sources. Death probability has been calculated with respect to the number of cases and not the total population

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