

The COVID-19 Vaccine Coverage Rates Across the Continents and Their Correlation with COVID-19 Cases and Fatalities: An Examination After Ending the Global Emergency

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ABSTRACT

Objectives: The Coronavirus Disease 2019 (COVID-19) vaccine coverage rates for various countries were analyzed to observe how the rates varied across continents as of May 6, 2023. We also aimed to determine their correlation with COVID-19 statistics (cases/fatalities/tests).

Methods: The "Our World in Data" website was searched to extract the vaccine coverage rates as of 1 July 2021, 1 January 2022, 1 July 2022, 1 January 2023, and 6 May 2023 for each country included in the study. Data on COVID-19 were obtained from the "Worldometer" website. Statistics were presented both cumulatively and yearly.

Results: This analysis included 180 countries. The analysis of variance test showed a statistically significant difference in the COVID-19 vaccine coverage rates and COVID-19 data, except for the Case-fatality rate (CFR), between continents, with Africa having the lowest. The Independent t-test showed that countries with 50% or higher vaccination coverage had higher rates of cases, deaths, and tests but a lower CFR in 2022, higher median age, and higher Gross Domestic Product. Similarly, in early 2023 (till May 5), there was a notable difference in the rate of cases and deaths. Furthermore, there was a clear positive correlation between vaccine coverage rates and all other data, except for CFRs, which had a negative correlation.

Conclusions: Inconsistencies in COVID-19 data, including vaccination coverage, across continents emphasize the importance of establishing uniform standards for identifying and diagnosing cases, ensuring fair vaccine distribution, and equipping all countries with essential diagnostic resources to prepare for future emergencies.

Keywords: Case-fatality, Median age, Pandemic, SARS-CoV-2, Tests

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