



Letter to the editor:

The Impact of the COVID-19 Pandemic on Healthcare Costs: A Descriptive Cross-Sectional Study

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Dear Editor,

The rising costs of healthcare services during the COVID-19 pandemic pose a significant challenge for maintaining an equilibrium between affordable healthcare services and sustainable healthcare delivery. One challenge is the growing demand surpassing the existing medical care capacity. COVID-19 infections not only incur acute care medical delivery costs but also lead to increased medical costs due to continued care after the infection (Bartsch et al., 2020).

Direct medical care costs have been increasing to the point where in 2016, they represented 18% of the US economy (Dieleman et al., 2020), and the trend indicates it will continue rising. It is essential to have a global understanding of health expenditure in each nation and develop strategic plans for medical spending that address the impact of medical costs on each country's population, ensuring quality growth and efficiency of medical care delivery (Global Burden of Disease Health Financing Collaborator Network, 2019).

The cost of medicine and vaccines can impose a substantial financial burden on the low- to middle-income population, particularly those already struggling with chronic health conditions unrelated to COVID-19. Manufacturers face the challenge of balancing access to tests, vaccines, and medication for the public versus the free market and raising medication and vaccine prices. Clarity and equilibrium in the research and development of new drugs are necessary to achieve sustainability and avoid continually raising medicine and vaccine prices (Schlander et al., 2021).

This quantitative research study investigates the impact of the COVID-19 pandemic on healthcare costs using six variables obtained from the Puerto Rico consumer price index (CPI). In this cross-sectional study, statistical analyses included descriptive statistics, tests for normality, correlation analysis using Kendall's Tau_b, and the Mann-Whitney test by using IBM SPSS version 25 statistical software.

Before the pandemic, the average medical cost in Puerto Rico was \$154.82, and it rose to \$156.91 after the pandemic, showing an increase of 1.35%. The variability of medical costs before the pandemic was 0.598, whereas it reduced to 0.159 after the pandemic, representing a 73.41% decrease. The average cost of non-prescription medicine in Puerto Rico was \$126.20 before the pandemic and increased to \$128.00 after the pandemic, indicating a rise of 1.43%. The variability of non-prescription

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medicine costs also changed, increasing by 84.42% after the pandemic. Before the pandemic, the variability was 0.437, then increased to 0.806 after the pandemic. Additionally, the average cost of medicine and vaccine in Puerto Rico was \$170.20 before the pandemic and rose to \$172.47 after the pandemic, indicating a 1.33% increase. The variability of these costs before the pandemic was 3.383 compared to 0.103 after the pandemic, showing a 96.96% decrease.

Regarding hospitalization costs, Puerto Rico experienced a slight increase after the pandemic. The average hospitalization cost was \$129.07 before the pandemic, which increased to \$129.32 after the pandemic, reflecting a 0.19% increase. The variability of hospitalization costs decreased by 81.57% after the pandemic, shifting from 0.331 to 0.061. Furthermore, looking at the cost of professional health services in Puerto Rico, the average cost was \$113.36 before the pandemic and rose to \$114.11, indicating a 0.66% increase. While the variability of the average cost of professional health service before the pandemic was 0.190 compared to 0.212 after the pandemic indicating an increase of 11.58%. Lastly, the average cost of health insurance in Puerto Rico was \$172.55 before the pandemic and increased to \$175.30 after the pandemic, representing a 1.59% increase. The variability of health insurance costs after the pandemic decreased by 53.32%, with a pre-pandemic variability of 0.632 and a post-pandemic 0.295.

The impact of the COVID-19 pandemic on healthcare costs emphasizes the need for comprehensive involvement of all stakeholders in planning and preparedness. The increase in total costs following the pandemic was relatively small. Considering inflationary pressures, this slight rise did not represent an increase in the consumption or purchase of medications. However, a notable change was observed in the variance of costs. This change in variance can be explained by the implementation of government policies and regulations in response to the pandemic. The different stakeholders must take proactive measures to stop or mitigate the rising cost. Understanding the lessons learned from this natural disaster can help to develop a plan to control or manage the rising cost of healthcare delivery.

Various studies have also reported a significant increase in healthcare costs following the COVID-19 pandemic in the USA and Puerto Rico (Pike, 2023; DeMartino et al., 2022). The question will be how prepared the healthcare system is to respond to this economic health challenge. Adequate planning is needed to mitigate the adverse effects of the COVID-19 pandemic. Finally, immediate action is needed to benefit the individual and society and guarantee a prosperous economic future.

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