

Ageing in Crisis: Quantile Evidence on COVID-19 Mortality and Healthcare Resource Allocation

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Abstract: This study employs nonlinear quantile regression and quantile-on-quantile regression to analyze how ageing demographics and healthcare infrastructure influenced COVID-19 mortality in 159 countries during 2020–2021. Results show that elderly populations primarily increased mortality in higher quantiles. Hospital bed capacity alone did not consistently reduce deaths, emphasizing the importance of strategic resource allocation. Higher healthcare expenditures notably reduced fatalities in severely impacted countries, suggesting policymakers should adopt targeted, adaptive healthcare strategies rather than uniform policies to enhance preparedness for future health crises.

Keywords: COVID-19, Older Adult Population, Health-Care Capacity, Nonlinear Regression Model, Quantile-On-Quantile Regression Model