

# RESEARCH INSIGHTS



## Why Do Young and Middle-Aged Adults Represent a Larger Share of Covid-19 Deaths in Developing Countries?



Young and middle-aged adults represent a larger share of Covid-19 deaths in developing countries—including Latin America—than in high-income countries. This is not due to those countries' younger populations.



Much of the gap is explained by lower recovery rates among non-elderly adults, which are linked to a high prevalence of preexisting conditions associated with severe Covid-19 complications, and in some cases by limited access to life-saving intensive care.



Higher infection rates also appear to play a role, as factors correlated to faster virus spread—including housing overcrowding and labor informality—are likewise correlated to non-elderly Covid-19 mortality.

### CONTEXT

The risks of developing severe complications and dying from Covid-19 increase sharply with age. Researchers and policymakers have thus sought to improve the efficiency of containment policies through a targeted approach that restricts mobility among the elderly and allows younger populations to resume their economic activities. Recent research, however, suggests that in low- and middle-income countries the mortality risk from Covid-19 for young and middle-aged adults is significantly larger than in high-income countries. This paper confirms that finding and concludes that the gap is the result of both higher rates of infection and lower rates of recovery.

### THE PROJECT

This paper assembles novel datasets at the country, city, and patient levels to study why the share of Covid-19 deaths among young and middle-aged adults is larger in developing countries than in high-income countries. Resources includes a country-level dataset of mortality by age group including 18 high-income and 13 developing countries, a dataset with anonymized information on individual patients in four developing and four high-income countries, and a dataset on mortality by age group for almost 1,400 Brazilian cities. These data are used to statistically account for the non-elderly Covid-19 mortality gap between developing and high-income countries.

#### Key Concept



#### RECOVERY RATES

The share of individuals who are infected with the virus but survive.

#### Key Concept



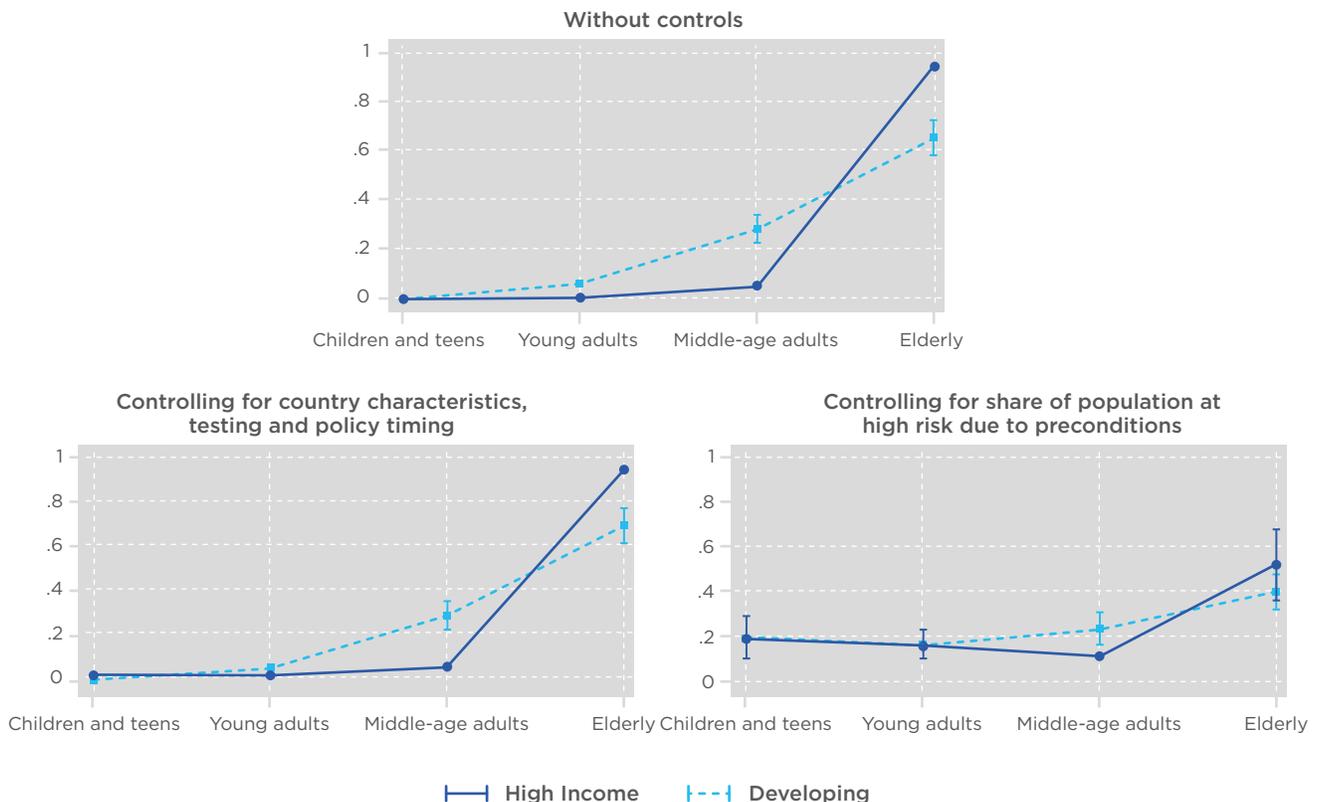
#### INFECTION RATES

The share of the population susceptible to being infected by the virus who actually become infected.

## RESULTS

1. Non-elderly adults represent a larger share of Covid-19 deaths in developing countries than in high-income countries. This can be seen in Figure 1 (top), which is based on the country-level sample. In developing countries, those aged 20 to 39 (“young adults”) account for a 5 percentage points higher share of Covid-19 deaths than those in high-income countries, and those aged 40 to 59 (“middle-aged adults”) account for a 23-percentage point higher share of their countries’ Covid-19 deaths.
2. This gap remains largely unexplained after accounting for multiple potential explanations (Figure, bottom left), including income levels, population size, total number of Covid-19 cases and deaths, the population’s age composition, testing per capita, positivity rates of tests, and the number of days that each country took to issue stay-at-home orders and to close schools following initial reported cases.
3. The gap appears to be largely explained by lower recovery rates in developing countries. The share of the population at high risk of developing severe Covid-19 complications due to preexisting conditions can explain all of the gap in the young adult population and half of the gap among middle-aged adults (Figure, bottom right).
4. The patient-level analysis largely aligns with these findings, and it highlights that lower recovery rates are also connected to more limited access to intensive care units in some countries such as Mexico and Colombia.

## Estimates of Age-Group Shares in Covid-19 Deaths in Developing and High-Income Countries



Note: Covid-19 mortality data by age group collected by the authors for 18 high-income and 13 developing countries as of July 2020. Age groups are defined as follows: Children and teens, ages 0-19; Young adults, ages 20-39; Middle-aged adults, ages 40-59; older adults, ages 60+. Figure shows estimated shares and 95% confidence intervals of each age group in Covid-19 deaths, separately for high-income countries and developing countries. Robust standard errors are clustered at the country level. The top panel shows raw estimated age-group shares for each group of countries. The bottom left panel adds controls for country characteristics (GDP per capita, country population, the total number of Covid-19 cases, the total number of Covid-19 deaths), testing (the number of tests per capita and the positivity rate of these tests at the time of data collection), and policy timing (the number of days between the first confirmed case in the country and school closures, and the number of days between the first case and the issue of stay-at-home orders). In addition to these variables, the bottom right panel also controls for the share of the population in each age group and country that is at high risk due to preexisting conditions that are associated with severe Covid-19 disease.

5. The city-level analysis suggests that non-elderly adults additionally have higher infection rates in developing countries. Variables that other studies have linked to a faster spread of the disease—such as residential overcrowding, access to piped water, and labor market informality—are likewise linked to a larger share of the non-elderly population in each city’s total Covid-19 deaths.
3. This study does not rule out the use of risk-based vaccine prioritization and lockdown targeting as tools that the region can use to tackle the pandemic. However, this research does highlight that age may not in itself be a sufficient indicator of Covid-19 mortality risk. The design of policy responses needs to take into account other factors—such as preexisting conditions, housing conditions, and access to healthcare—in order to protect lives as the region continues on its path to a much-needed economic recovery.

## POLICY IMPLICATIONS

1. Latin American and the Caribbean faces a formidable challenge from the Covid-19 pandemic. Policymakers not only need to decide how to allocate the vaccines when they arrive, but they also need to control the spread of the disease in the meantime, while trying to prevent the dire economic and social costs associated with strict lockdown measures and other containment policies. Promising alternatives include risk-based vaccine prioritization and targeted confinement—that is, restricting the mobility of the sub-populations that face the highest risk of becoming gravely ill and dying, while populations seen as facing smaller risks are allowed to resume economic activities.
2. Existing research has found age to be a good indicator of risk of severe Covid-19 complications. The relatively young population of Latin America and the Caribbean could represent an advantage in this context, as age-based targeting may prove particularly cost-effective. However, this study shows that the region’s development challenges—particularly the high prevalence of morbidities and the limitations of health-care services—have made young and middle-aged adults more vulnerable to the Covid-19 pandemic than in other regions of the world.

### Key Concept



#### INDIVIDUALS AT HIGH COVID-19 RISK

People likely to develop severe Covid-19 complications and/or die from the disease. Key risk factors include a variety of preexisting conditions such as chronic diseases and disorders.



### FULL STUDY

[Chauvin, J. P., A. Fowler, and N. Herrera L. 2020. “The Younger Age Profile of COVID-19 Deaths in Developing Countries.”](#)

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