The Not So Great Equalizer

Racial and Income Disparities across Causes of Death *

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Extended Abstract

Introduction

Income and health exhibit a strong and well-documented correlation. For example, conditional on surviving until age 40, men and women in the top percentile of the income distribution live more than a decade longer than their counterparts in the bottom percentile of the income distribution in the United States (Chetty et al., 2016). Similar patterns have been observed across many other countries and time periods (see, e.g., Evans et al. (2012) for an overview). However, determining whether the health-income gradient exists across all causes of death or is cause-specific has historically been challenging due to data limitations. Understanding which causes of death are relevant for generating observed health disparities can help policymakers more efficiently allocate resources into public programs that aim to ameliorate health disparities as well as facilitate hypothesis generation as to the causal drivers that underlie these descriptive facts.

In this paper, we provide new descriptive evidence on these patterns by analyzing nationally-representative, individual-level data on economic and household characteristics linked to longitudinal mortality records from the Mortality Disparities in American Communities (MDAC) Census linking project. We use these data to document the mortality-income gradient, examine specific causes of death contributing most to the gradient, and investigate heterogeneity by race and ethnicity.

We have three main contributions to the literature. First, we demonstrate that specific diseases drive the overall mortality-income gradient (omitted until disclosure). Second, we show that certain causes of death are over-represented among low-income people and racial/ethnic groups. Third, we find that interactions between income and race/ethnicity are important moderators for certain causes of death.

Data

We use the nationally-representative Mortality Disparities in American Communities (MDAC) database, which links the 2008 American Community Survey (ACS) with 2008-2015 National Death Index (NDI) records, providing individual-level data on household characteristics and death certificate information for approximately 4.5 million people (US Census Bureau, 2022).

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Methods

We compute age-standardized all-cause and cause-specific mortality rates across household income percentiles and racial/ethnic categories separately for three age groups: (1) children 0-17 years; (2) working-age adults 18-64 years; and (3) older adults 65+ years. These cohorts are kept distinct because of expected heterogeneity in income and mortality profiles. For example, older adults are unlikely to have steady salary streams. Children are also less likely than adults to die from certain causes, like diabetes-related complications, and more likely than adults to die from other causes, like congenital anomalies. Specific causes of death are categorized by ICD-10 codes, which are supplied in MDAC based upon death certificate information. Other cause-specific categories include preventable mortality, treatable mortality, and "deaths of despair." Age-standardization occurs for each year of age. Estimates are weighted to be nationally-representative.

Using these linked data, we present age-adjusted rates of cause-specific mortality across percentiles and document both the absolute difference in mortality by cause and the proportional differences by cause across those with different household incomes, identifying the top causes responsible for the health-income gradient at different points in the life cycle.

We also provide quantitative comparisons in cause-specific mortality rates across race and ethnicity. We do this by estimating interacted linear probability models:

$$\begin{aligned}(\texttt{mortality}_i) = \beta_0 & \\ + \beta_1(\texttt{income group})_i & \\ + \beta_2(\texttt{racial/ethnic group}_i & \\ + \beta_3(\texttt{income group} * \texttt{racial/ethnic group})_i & \\ + \epsilon_i &\end{aligned} \tag{1}$$

for individual i, with errors robust to heteroskedasticity.

Results

Specific results are pending review from the U.S. Census Bureau's Disclosure Review Board.

Discussion

Our results suggest important heterogeneity among specific causes of death by income, race/ethnicity, and the interaction of these demographic groups. These findings establish that the widening mortality-income gradient in the United States is heterogeneous by race/ethnicity and is driven by certain causes of death. Our results suggest that policy prescriptions should target specific diseases in order to most effectively reduce the health gap among high-income and low-income populations and racial/ethnic majority and minority groups.

References

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