Do People Die from Income Inequality of a Decade Ago?

New research from the field of social epidemiology suggests that income inequality has a long-term detrimental impact on individual mortality risk. The findings provide robust evidence that income inequality exerts an influence on mortality rates five years later. This influence peaks at seven years and fades after 12 years.

Published in the journal Social Science and Medicine, the study uses a different data structure and statistical model to existing studies on the impact of income inequality on population health. In doing so it overcomes limitations inherent to the research design of existing studies and is able to provide a more accurate picture of the long-term effects of income inequality on individual mortality.

In this new study, a systematic review was undertaken to clarify and critique current literature on the effect of income inequality on population health. 79 studies, published in peer reviewed journals up to 2008 and focusing on the effect of income inequality on mortality are examined, with particular attention paid to the possible causes for the mixed findings in much of the existing literature. Three possible explanations for mixed findings are identified. These are the unit of analysis chosen (e.g. state/country/city and/or all-cause mortality/disease-specific mortality); the research design of the study (aggregate-level or multi-level) and the approach towards the question of timing, specifically whether income inequality has an instantaneous or delayed effect on mortality.

Timing is considered, by Zheng, to be particularly important to an accurate understanding of the impact of inequality on mortality for two reasons. First, inequality affects health by intensifying relative deprivation and psychosocial stress, under-investing in public goods and eroding social capital. There may be a lag between changes in income inequality and their health effects because these mediating mechanisms of action may not be instantaneous. Second, there tends be a period of years between exposure to risk factors, such as income inequality and the onset of diseases and, moreover, the interval between changes in income inequality and changes in health may differ across health outcomes. There may, for example, be a significant
time lag between changes in income inequality and chronic illness, life expectancy and mortality whereas the effects of income inequality on self-rated health or psychological distress may be immediate.

Of the 79 studies reviewed by Zheng, four examined the lagged effect on population/group mortality at an aggregate level (i.e. analysing effects that result from an accumulation of individual-level associations and not controlling for confounding individual-level characteristics). Seven further studies investigated the effect of income inequality on subsequent individual mortality risk within a restricted time period. However, none of these studies controlled for a series of preceding income inequalities, investigating the lag effect of income inequality at a certain year only and neglecting the fact that mortality rates are the result of multiple successive different income inequalities within a period of time.

In order to avoid the limitations of the 79 studies reviewed, this study employs a multi-level research design, controlling for macro-level inequality and individual-level characteristics (e.g. income, education), and uses a statistical model called the discrete time-hazard model. This statistical model enabled the researcher to examine each individual's mortality risk as an outcome of a series of inequalities. Income inequality is thereby treated as a time-varying person-specific variable. Zheng used data from the U.S. National Health Interview Survey from 1986 to 2004 with mortality follow-up data from 1986-2006 and measured income inequality using three different methods: the Gini coefficient, the Atkinson index, and the Theil entropy index.

The findings indicate that income inequality, measured using the Gini coefficient, does not have an instantaneous detrimental effect on individual mortality risk. However, it does have an adverse effect five years later, an effect which peaks at seven years and diminishes after 12 years. A 0.01 increase in the Gini coefficient was found to increase the cumulative odds of an individual's death by 122% over a period of 12 years and the broader pattern of the effect was found to be generally similar for all three measures of income inequality. Although Zheng stresses that it is difficult to “theoretically justify” the exact time order of the lagged effects, he suggests that the lagged effects may be due both to the time it takes for the mediating mechanisms at play to take effect on an individual's health and the latency period between exposure to risk factors and the development of a health condition in an individual.

It is suggested by Zheng that, given the time period assessed and national-level, single-country focus of this study, the robustness and validity of the findings could be further tested using data in other countries, time periods and health outcomes. Further research investigating the long-term impact of income inequality at the federal state level is encouraged as a useful point of comparison. However, Zheng concludes by emphasising the importance of policy action, in addition to research, if the suppressive effect of income inequality on the overall health trend is to be tackled.
Reference