

Life expectancy and poverty



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Measuring the number of years that an individual is expected to live with a specific economic status is important for the following reasons: (1) to monitor the achievement of national and international poverty and mortality reduction targets (eg, the Sustainable Development Goals); and (2) to draw attention to the proportion of a population spending considerable periods of life under a defined poverty line. Riumallo-Herl and colleagues¹ contribute to this important debate by proposing a measure of poverty-free life expectancy (PFLE) that combines information on health and economic status of a population.

The proposed PFLE measure is based on Sullivan's method, which assigns the same mortality to those who live in poverty and those who do not. Studies on subpopulations show the existent mortality heterogeneity in populations. For example, a gap greater than 12 years between life expectancy of Inuit indigenous peoples versus non-indigenous peoples has been noted in Canada.² In Denmark, the average life expectancy for men with mental disorders lags behind the rest of the population by 10 years.³ In the USA, a 14 year gap in life expectancy has been reported between the richest 1% of the population and poorest 1%.⁴ Taking into account the strong association between a person's relative position in the income hierarchy (rather than absolute income) and life expectancy,⁵ the use of the Sullivan method is a drawback of the proposed PFLE.

Any study aiming for a global effect needs a strong statement for a call to improve vital statistics and the quality of data, particularly for countries where information is still deficient.⁶ This diversity in the quality of data complicates efforts to provide PFLE results for most of the world. The heterogeneity in information, combined with the problems of the method used by PFLE, further complicate the use of the results presented by Riumallo-Herl and colleagues.¹ Several countries have the data to quantify status transitions between living in poverty and out of poverty, and from each of those to death, which are needed to calculate the years lived in and out of poverty using multistate models.⁷ An appropriate balance of quantity of the PFLE global estimates with the quality of these calculations using proper methods and data is needed to evaluate the validity of the estimates of PFLE. The assessment of the

PFLE results is complex and must be used cautiously so it does not mislead policy makers.

There are reasons to be sceptical about the authors' policy suggestions from PFLE estimates. The authors mention that "policies that reduce mortality in populations living below the poverty line will not add to overall PFLE in the way that reducing mortality in populations living above the poverty line will".¹ It is careless to suggest that alleviating the burden of premature death in the poor will not improve PFLE. Changes in PFLE depend on changes in age-patterns of poverty prevalence and mortality. In the past, increases in life expectancy were driven by decreases in mortality at young age, but today, it is decreases in mortality at old age that increases life expectancy.⁸ Yet the highest levels of poverty are also found at young and old ages, as shown in figure 1 of the Article.¹ Thus, saving lives of individuals below the poverty line will yield increases in PFLE and benefits for the entire society. The authors further compare the use of healthy life expectancy by policy makers to identify health gaps with the potential use of the proposed PFLE. Both metrics are based on the Sullivan method, and healthy life expectancy corresponds to an overall population measure because the assumption that members of the population transition between healthy and unhealthy states is not unrealistic.⁹ However, it is difficult to take PFLE as a population measure since transitions in and out of poverty might occur for a subset of the population only and differ greatly between countries.

Further discussion is needed about which measures help us move forward and which should be discarded. Riumallo-Herl and colleagues' call for an integrated approach to measure poverty and mortality should be praised. However, as well expressed in earlier research on income distribution and life expectancy: "a paradox inherent in the scientific method is that, attached though we are to the hypotheses we formulate, we must really subject them to assault and search for circumstances that really test their resilience".¹⁰

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I declare no competing interests.

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