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EDITORIAL COMMENT

Strategies for reducing cardiovascular mortality should go beyond control of classic risk factors

As estratégias para a redução da mortalidade cardiovascular devem ir além do controlo dos clássicos fatores de risco

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Cardiovascular disease (CVD), especially myocardial infarction and stroke, is the leading cause of death worldwide.[1] In Portuguese-speaking countries (PSCs), ischemic heart disease is the leading cause of death, followed by cerebrovascular disease, with the exception of Mozambique and São Tomé and Príncipe, where this order is reversed.[2] It has been demonstrated that the most important risk factors for CVD in the PSCs are hypertension and diet.[2]

The paper by Villela et al. published in this issue of the *Journal*[3] reveals that mortality due to CVD, especially cerebrovascular and hypertensive disease, is inversely related to the Human Development Index (HDI) of Brazil's federative units (the 26 states plus the Federal District of the capital, Brasilia), and to supplementary health coverage (private health insurance), probably reflecting the impact of socioeconomic inequality.

Brazil, with its area of 8.5 million km^2, more than 207 million inhabitants, and 27 federative units, is the largest PSC, and presents enormous social, economic, cultural, ethnic and geographical diversity.[4] These inequalities indicate that there is not in fact one single Brazil but many, and there are similar disparities between the PSCs, which, although they share the same history of colonization and the same language, have extremely diverse socioeconomic levels and health indicators.

Some regions of Brazil present high levels of socioeconomic development, such as the Federal District, which has a similar HDI to that of Portugal, but economically poor states such as Alagoas, Maranhão and Piauí have HDIs closer to those of Cape Verde, East Timor and Equatorial Guinea.[2,3,5,6] Although there no Brazilian regions with HDIs as low as PSCs such as Mozambique and Guinea-Bissau,[5,6] the demonstration of a correlation between cardiovascular mortality in Brazil and its socioeconomic indicators[3,6] should be a stimulus for improving our understanding of the determinants of CVD that go beyond the classic risk factors, a task that is relevant not only for Brazil or the PSCs, but for the whole world.

The Prospective Urban and Rural Epidemiological (PURE) study, which assessed healthy lifestyles among individuals with CVD in 628 urban and rural communities in 17 countries, demonstrated that the prevalence of risk factors is highest in high-income countries, intermediate in middle-income countries, and lowest in low-income countries. However, although the risk factor burden was lowest in low-income countries, the rates of major CVD and death were substantially higher in low-income than in high-income countries.[7] In addition, it has been shown that the availability and use of medication, such as that established for secondary prevention of cardiovascular disease, is alarmingly low worldwide, but predominantly in low-income regions. In many countries with the lowest use, pro-rich inequality is greatest.[8]

The challenge of containing the progress of CVD is complex. It has been established that many different factors need to be controlled,[9] including behavioral (smoking, diet,

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physical activity), biological (hypertension, hypercholesterolemia, diabetes), psychosocial (depression, anxiety, acute and chronic life stressors, lack of social support), health systems (access to care, screening, diagnosis, quality of care), environmental (pollution control, water treatment), intersectoral (tobacco control policies, agricultural policies, food labeling), and information (health education, multilevel communication).[10]

The recently published First Brazilian Registry of Hypertension[11] show that the results of the various hypertension control strategies in the country have been good, with 60.6% of patients treated in tertiary cardiology centers meeting target blood pressure levels (below 140/90 mmHg), although it does not reflect the entire hypertensive population of the country. Even so, mortality from CVD in Brazil remains alarmingly high.[6]

The path to improving global cardiovascular health involves multiple and complex strategies, but as demonstrated in the article by Villela et al.[3] assessing conditions in Brazil, it appears above all to involve reducing regional inequalities and improving the social and economic conditions of the population.

Conflicts of interest

The author has no conflicts of interest to declare.

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