

High blood pressure puts a high pressure in low and middle-income countries

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In 2019, ischaemic heart disease and stroke were the top-ranked causes of disability-adjusted life-years (DALYs) among people aged 50 years and over¹. Hypertension is the main driver of both diseases, thus being the leading preventable risk factor for cardiovascular disease and all-cause mortality². Contrary to hypertension, which is usually defined as a systolic blood pressure (SBP) ≥ 140 mm Hg and a diastolic blood pressure (DBP) ≥ 90 mm Hg, fewer research has been made regarding high SBP (HSBP), defined as a SBP ≥ 110 -115 mm Hg. HSBP is a prevalent condition among elderly people, but whether it represents a public health challenge in the context of global ageing has been little studied.

In this issue of EJPC, Huang and colleagues report 30-year trends in the number of deaths and DALYs related to HSBP among people aged 60-89³. Using data from the Global Burden of Disease Study, the estimated that, between 1990 and 2019, the number of deaths and DALYs attributable to HSBP increased 54% and 52% in absolute values, while the corresponding rates decreased by 27% and 27.8%, respectively. This apparent contradiction is easily explained by the stronger growth of the aged population relative to the increase in the number of deaths and DALYs. While this decrease in rates might be good news as fewer elderly people are being affected by HSBP, the considerable increase in the absolute number of cases is worrisome. Indeed, most of the increase in deaths (+2.7 million/year overall) and DALYs (+50 million overall) occurred in countries with middle-low to low socio-demographic index (SDI), i.e., countries where the health system is likely unable to cope with such an increase. For example, in 1990, Indonesia, Bangladesh and Pakistan ranked 9th, 21st and 15th regarding the number of deaths, while in 2019 their rank was 4th, 9th and 10th, respectively; a similar trend was found for DALYs. Regarding death rates, the strongest increases for both outcomes occurred in Uzbekistan, the Philippines and Honduras. In 2019, the highest death rates were recorded in Bulgaria, Uzbekistan, and Afghanistan.

How can such countries act? Drug treatment might not be available or affordable to most and, despite a sizable fraction of HSBP burden occurring for SBP values below 140 mm Hg, current guidelines do not consider HSBP as a therapeutic target⁴. Hence, to alleviate this increasing burden, lifestyle changes might be the sole solution. Interventions focusing on diet and physical activity might prove as effective as pharmacological interventions⁵, with strong effects at the population level⁶, although their implementation will be far from easy. Lobbying from food industries, dietary deserts, westernization of dietary habits, increase in sedentary levels due to insecurity and rise in screen time use are big hurdles, and brave decisions such as reducing exports to favor adequate provision of healthy food to the population will have to be taken.

In summary, the paper by Huang and colleagues reminds us that favorable trends in death and DALYs rates attributable to HSBP can mask a worrying issue, the (yet) inexorable increase in the number of deaths and DALYs this condition will bring to the most fragile health systems.

References

1. G. B. D. Diseases and Injuries Collaborators. Global burden of 369 diseases and injuries in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet* 2020; 396: 1204-1222. DOI: 10.1016/S0140-6736(20)30925-9.
2. G. B. D. Risk Factor Collaborators. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 2018; 392: 1923-1994. 20181108. DOI: 10.1016/S0140-6736(18)32225-6.
3. Huang Y, Meng L, Liu C, et al. Global burden of disease attributable to high systolic blood pressure in older adults, 1990-2019: an analysis for the Global Burden of Disease Study 2019 *European Journal of Preventive Cardiology* 2022.
4. Williams B, Mancia G, Spiering W, et al. 2018 ESC/ESH Guidelines for the management of arterial hypertension. *Eur Heart J* 2018; 39: 3021-3104. 2018/08/31. DOI: 10.1093/eurheartj/ehy339.
5. Marques-Vidal P. Comparison of lifestyle changes and pharmacological treatment on cardiovascular risk factors. *Heart* 2020; 106: 852-862. 20200430. DOI: 10.1136/heartjnl-2019-316252.
6. Franco M, Ordunez P, Caballero B, et al. Impact of energy intake, physical activity, and population-wide weight loss on cardiovascular disease and diabetes mortality in Cuba, 1980-2005. *Am J Epidemiol* 2007; 166: 1374-1380. 20070919. DOI: 10.1093/aje/kwm226.