

## The Big Challenge in Cardiovascular Disease Control in Low- and Middle-Income Countries

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From being a minor cause of deaths at the beginning of the 20<sup>th</sup> century, cardiovascular disease (CVD) deaths have increased more than threefold to now become the leading cause of mortality. Several decades ago, it was considered a disease of affluent or highly developed countries, because of the populations' lifestyle and health behaviours which were perceived to be less healthier-with more fondness for high cholesterol diets, smoking, and sedentary activity. Now, it is well established that about 80 percent of the global burden of CVD death is reported in low- and middle-income countries, and this is the main driver why CVD is now the leading cause of mortality worldwide [1,2].

It appears that high-income countries have more aggressive CVD public health education and control programs with better access of the public to adequate cardiovascular care prevention and management; hence, the decline in their CVD morbidity and mortality. On the other hand, low- and middle-income countries do not have sufficient resources to stem the tide of CVD and provide access to adequate cardiovascular care for their citizens. Usually in these countries, there are differences among its different socioeconomic classes with regards to access to modern diagnostics and therapies, which can play a crucial role in early diagnosis and prevention of complications of CVD.

Generally, countries with universal health care (UHC)-wherein everyone, rich or poor, have access to adequate healthcare-have marked healthcare advantages. Most developed countries have an operational and efficiently functioning UHC, while low- and middle-income countries are still struggling to have UHC as part of their healthcare delivery program.

Some middle-income countries may have CVD prevention and care as part of their UHC program, but nationwide implementation is still a challenge, and sustainability of the program on the long term remains a pipe dream. Government, health officials, legislators, civil society and the private healthcare community must really get their act together to pull it through.

Even in a relatively well-developed region like Europe, low- and middle-income member countries of the European Society of Cardiology (ESC) have been shown to be saddled with the CVD burden more, compared to high-income countries, wherein the gross national income per capita is US\$12 000 or more, as defined by the World Bank. In its 2017 CVD statistics publication, the health inequity particularly due to CVD is apparent between the 56 ESC member countries included in the report [3].

The report states that lower-income countries, compared to high-income countries, have:

- Higher premature death (before 70 years) due to CVD;
- More potential years of life lost due to CVD;

- Higher age-standardised incidence and prevalence of coronary heart disease and stroke; and
- Three times more years lost, including less quality of life, due to CVD ill-health, disability, or early death.

It is definitely more costly treating CVD than preventing CVD. The meager resources allocated for healthcare in lower-income countries can easily get depleted because of the high cost of treating people with CVD. Statistics like those indicated in the ESC report only highlight the need for a more dedicated implementation of CVD prevention programs particularly in low- and middle-income countries. This appears to be the most rational and logical way to get the biggest bang for the buck, where healthcare resources are scarce. Unfortunately, the biggest chunk of resources in these lower-income countries are spent on CVD treatment, with a modicum of resources allocated for CVD prevention and health promotion.

There must be a more focused plan on more cost-effective CVD prevention programs. For example, it is well established that elevated blood pressure is a major culprit worldwide implicated for the deaths of almost 10 million annually. Focusing on optimal hypertension prevention and control could significantly impact CVD reduction, including CVD deaths.

A senator in the Philippines and his staff requested for a meeting recently and asked for some inputs on hypertension-control in our country. I emphasized that to make do with whatever resources we have, we should tailor-fit our strategies to our specific local needs, and government intervention, in terms of legislation or policy-making, may be necessary. A clear case in point is salt reduction in all processed foods. This is highly doable and can have a tremendous impact on hypertension control, since around 80 percent of the population's salt intake is really coming from them. Food products with excessive salt content should be identified and their manufacturers should be 'convinced' to a reduction in their salt content. Imposing it abruptly may encounter a lot of resistance, but implementing it gradually over a three- to five-year period should be more doable.

Many government agencies in low- and middle-income countries are giving free antihypertensive treatments which are based on treatment guidelines for hypertension. However, considering the different phenotypes of hypertension, some guideline based treatments may not be suitable for some populations. The International Society of Hypertension will soon come out with more region- and country-specific recommendations in the management of elevated blood pressure.

It is most unfortunate that in many low- and middle-income countries, the health systems are still focused on the reduction of maternal and neonatal mortality, and infectious diseases such as malaria, tuberculosis, and infectious diarrhea. While these causes of mortality should not be neglected, it might be like barking up the wrong tree, as the statistics of deaths due to CVD stealthily increases in these countries.

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